

GoldStar



VHS VIDEO CASSETTE RECORDER

PAL

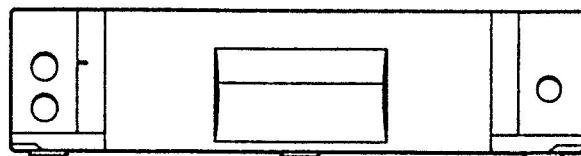
SERVICE MANUAL

CAUTION

BEFORE SERVICING THE CHASSIS, READ THE "SAFETY PRECAUTIONS" IN THIS MANUAL

NOTE)

The deck mechanism of this VCR is D-17. This section is provided separately. When checking the mechanical problems, refer to the manual (Part No. 494-004K) provided separately.



MODEL : QUISY 40



GoldStar

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NOTE) The table of contents for this section is edited separately.

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SECTION 1 SUMMARY

KEY TO ABBREVIATIONS

A	AC	: Alternating Current	L	L	: Low, Left, Coil
	ACC	: Automatic Color Control		LED	: LED
	ADJ	: Adjust		LECHA	: Letter Character
	A/E	: Audio Erase		LP	: Long Play
	AFC	: Automatic Frequency Control		LPF	: Low Pass Filter
	AFT	: Automatic Fine Tuning	M	MAX	: Maximum
	AGC	: Automatic Gain Control		MD	: Modulator
	ALC	: Automatic Level Control		MIC	: Microphone
	AM	: Amplitude Modulation		MIN	: Minimum
	AMP	: Amplifier		MIX	: Mixer, Mixing
	ANT	: Antenna		M.M.	: Mono Multi Vibrator
	APC	: Automatic Phase Control		MMV	: Monostable Multivibrator
	ASS'Y	: Assembly		MOD	: Modulation, Modulator
	AUD	: Audio		MODEM	: Modulator-Demodulator
	AUTO	: Automatic	N	NR	: Noise Reduction
	AUX	: Auxiliary	O	OSC	: Oscillator
B	B	: Base		OSD	: On Screen Display
	BPF	: Bandpass Filter	P	PB	: Playback
	BW or B/W	: Black and White		PCB	: Printed Circuit Board
C	C	: Capacitor, Chroma, Collector		PG	: Pulse Generator
	CAN	: Cancel		PLL	: Phase Locked Loop
	CAP	: Capstan		P-P	: Peak-to-Peak
	CATV	: Cable Television		PRE-AMP	: Preamplifier
	CBA	: Circuit Board Assembly		PS	: Phase Shift
	CCD	: Charge Coupled Device		PWM	: Pulse Width Modulation
	CFG	: Capstan Frequency Generator	Q	Q	: Transistor
	CH	: Channel		OH	: Quasi Horizontal
	CHROMA	: Chrominance		QSR	: Quick Setting Record
	CLK	: Clock		QTR	: Quick Timer Record
	CNR	: Chroma Noise Reduction		OV	: Quasi Vertical
	COMB	: Combination	R	R	: Resistor, Right
	COMP	: Comb Filter		RE(or RC)	: Remocon, Receiver
		: Comparator		REC	: Recording
		: Composite		REF	: Reference
		: Compensation		REG	: Regulated, Regulator
	CONV	: Converter		REMOCON	: Remote Control(unit)
	CS	: Chip Select		REV	: Reverse
	CST	: Cassette		REW	: Rewind
	CTL	: Control		RF	: Radio Frequency
	CUR	: Current		R/P	: Record/Playback
	CYL	: Cylinder		RTC	: Real Time Counter
D	D	: Drum, Digital, Diode, Drain	S	S	: Serial
	dB	: Decibel		SH	: Shift
	DC	: Direct Current		SHARP	: Sharpness
	DEMOD	: Demodulator		SIF	: Sound Intermediate Frequency
	DET	: Detector		SLD	: Side Locking
	DEV	: Deviation		S/N	: Signal to Noise Ratio
	DHP	: Double High Pass		SP	: Standard Play
	DIGITRON	: Digital Display Tube		SUB	: Subtract, Subcarrier
	DL	: Delay Line		SW or S/W	: Switch
	DOC	: Drop Out Compensator		SYNC	: Synchronization
	D/V	: Dummy Vertical		SYSCON	: System Control
E	E	: Emitter	T	T	: Coil
	EE	: Electric to Electric		TP	: Test Point
	EMP	: Emphasis		TR	: Transistor
	EP	: Extended Play		TRK	: Tracking
	EQ	: Equalized		TRANS	: Transformer
	ES	: Electrostatically Sensitive		TU	: Tuner, Take-Up
F	F	: Fuse	U	UHF	: Ultra High Frequency
	FB	: Feed Back		UNREG	: Unregulated
	FBC	: Feed Back Clamp	V	V	: Volt, Vertical
	FE	: Full Erase		VA	: Always Voltage
	FF	: Fast Forward		VCO	: Voltage Controlled Oscillator
	FG	: Frequency Generator		VGC	: Voltage Gain Control
	FL	: Filter		VHF	: Very High Frequency
	FM	: Frequency Modulation		VISS	: VHS Index Search
	F/R	: Front/Rear		VR	: Variable Resistor or Volume
	FS	: Frequency Synthesizer		V-Sync	: Vertical Synchronization
	FSC	: Subcarrier Frequency		VTG	: Voltage to Voltage
	F/V	: Frequency Voltage		VW	: Voltage to Voltage
	FWD	: Forward		VXO	: Voltage X-tal Oscillator
G	GEN	: Generator	W	W	: Watt
	GND	: Ground		WHT	: White
H	H	: High, Horizontal		W/O	: With Out
	Hz	: Hertz	X	X-TAL	: Crystal
I	IC	: Integrated Circuit	Y	Y/C	: Luminance / Chrominance
	IF	: Intermediate Frequency		YNR	: Luminance Noise Reduction
	INS	: Insert	Z	ZD	: Zener Diode
	I/O	: Input/Output			

IMPORTANT SAFETY PRECAUTIONS

Prior to shipment from the factory, the products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

• Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the Δ symbol and shaded (■) parts are critical for safety.

Replace only with specified part numbers.

Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Use Specified internal wiring. Note especially:

- 1) Wires covered with PVC tubing
- 2) Double insulated wires
- 3) High voltage leads

4. Use specified insulating materials for hazardous live parts. Note especially:

- 1) Insulation Tape
- 2) PVC tubing
- 3) Spacers
- 4) Insulation sheets for transistor

5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.(Fig. 1)

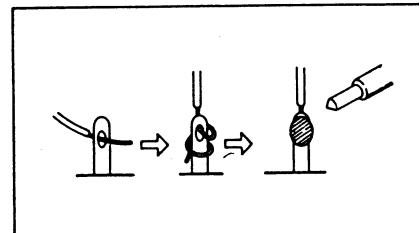


Fig. 1

6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

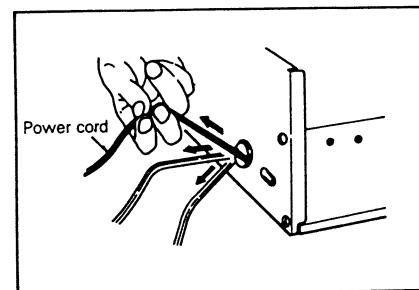


Fig. 2

7. Check that replaced wires do not contact sharp edged or pointed parts.

8. When a power cord has been replaced, check that 10-15Kg of force in any direction will not loosen it.(Fig. 2)

9. Also check areas surrounding repaired locations.

10. Products using cathode ray tubes (CRTs)

In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the parts specified. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

SAFETY CHECK AFTER SERVICING

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

• Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

• Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set(RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

• Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d). (d') between soldered terminals, and between terminals and surrounding metallic parts. See table below.

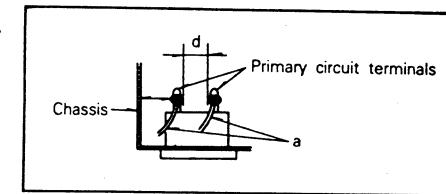


Fig. 3

Table 1: Ratings for selected areas

AC Line Voltage	Region	Insulation Resistance	Dielectric Strength	Clearance Distance(d),(d')
*110 to 130 V 200 to 240 V	Europe Australia	$\geq 10 M\Omega/500 V$ DC	4kV 1 minute	$\geq 6mm(d)$ $\geq 8mm(d')$ (a Power cord)

*Class II model only.

Note. This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

• Leakage Current test

Confirm specified or lower leakage current between B(earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.)

Measuring Method: (Power ON)

Insert load Z between B(earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure and following table.

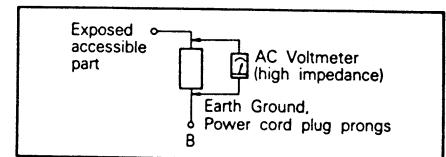


Fig. 4

Table 2:Leakage current ratings for selected areas

AC Line Voltage	Region	Load Z	Leakage Current(i)	Earth Ground (B) to:
100 to 130 V 200 to 240 V	Europe Australia	$\text{---} \text{---}$ $2k\Omega$	$i \leq 0.7m A$ peak $i \leq 2m A$ dc	Antenna earth terminals
		$\text{---} \text{---}$ $50k\Omega$	$i \leq 0.7m A$ peak $i \leq 2m A$ dc	Other terminals

Note. This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

INTRODUCTION

This service manual provides a variety of service information. It contains the mechanical structure of the Video Cassette Recorder(VCR) together with mechanical adjustments and the electronic circuits in schematic form.

FEATURES

- | | |
|---|---|
| • VPS (Video Programming System) | • Auto Power and Play Function |
| • HQ, High Quality picture enhancement system improves image sharpness and detail | • Automatic rewind |
| • Full-Function infrared remote control (OSD programming) | • Back-up time up to 1 year |
| • Auto Video Head Cleaner | • Digital Auto Tracking system |
| • 8 event/1 year programmable timer with everyday recording | • Quick Start Function |
| • QSR, Quick Set Recording with stand-by (up to 9 hours) | • Real Time Counter |
| • Programmable channel memory with voltage synthesized Tuner (up to 40 positions) | • Center mechanism |
| • Double-Azimuth 4-Head system | • Child Lock Function |
| • ACSS (FUNKUHR : Automatic clock setting system) Function | • Logic Search Function, Jet Search Function |
| • ACMS plus (Automatic channel memory system) Function | • LP recording and playback Function |
| • ShowView is a trademark applied for by Gemstar Development Corp.
ShowView system is manufactured under license from Gemstar Development Corporation. | • Monitor Function |
| | • Fine Still, Frame Advance, Variable Slow Function |
| | • Built-in ShowView Programming |
| | • PREMIERE Compatible |

This VCR was manufactured and assembled under our strict quality control standards and meets or exceeds industry specifications and standards.

SPECIFICATIONS

General :

Power Source : AC 230V±10%, 50Hz
Power Consumption : Approx. 33 Watts
Video Recording System : Double azimuth 4 heads, helical scanning system
Tape Speed :

Tape Format : Tape Width 1/2" (12.7mm high density tape VHS)
Maximum Recording Time : 4 Hours at SP mode/8 Hours at LP mode (with E-240 tape)
FF/Rewind Time : Less than 300sec (with E-180 cassette)
Dimensions (W×H×D) : 14.2"×3.5"×13.5" (360×88×342mm)
Weight : About 11.24 lbs (5.1kg)
Operating Temperature : 41°F - 95°F (5°C - 35°C)
Operating Humidity : 35% - 80%
Timer : 24 hours display type

Video :

Television System : CCIR standard (625lines, 50 fields)
Recording Format : PAL/SECAM Colour signal
RF Reception : PAL/MESECAM
RF OUT : PAL B/G
Input Level : PAL G
Output Level : VIDEO IN (SCART-PIN type)
Signal to Noise Ratio : 1.0Vp-p 75 ohm unbalanced
RF Modulator : VIDEO OUT (SCART-PIN type)
More than 43dB
UHF Channels 32~40 (Adjustable)

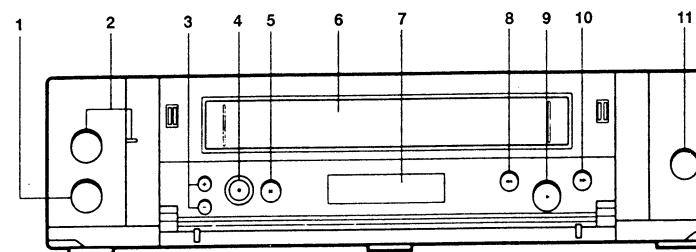
Audio :

Input Level : AUDIO IN (SCART-PIN type)
0 dBm more than 50 Kohm
Output Level : AUDIO OUT (SCART-PIN type)
0 dBm Less than 1Kohm
Audio Track : Monotrack type
Audio Frequency Response : 100Hz-10KHz ($\pm \frac{1}{2}$) at SP mode/100Hz -5kHz($\pm \frac{1}{2}$) at LP mode
Signal to Noise Ratio : More than 43dB

*Designs and specifications are subject to change without notice.

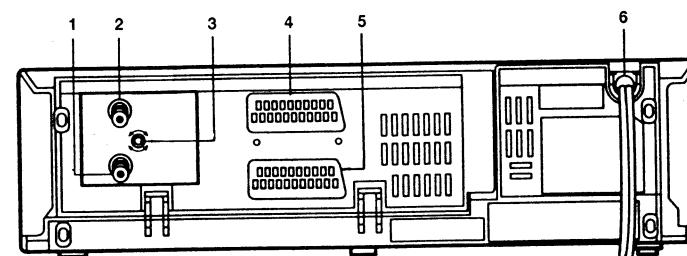
LOCATION OF CUSTOMER CONTROLS

FRONT



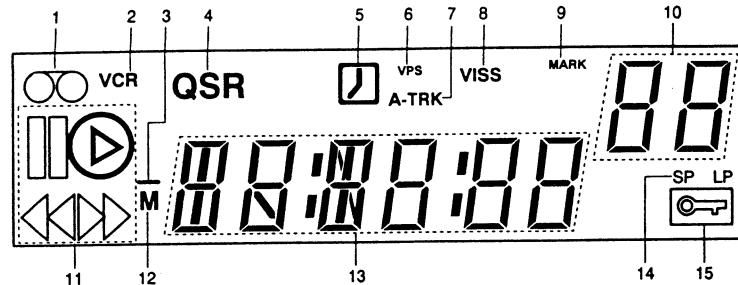
- 1. STOP/EJECT BUTTON
- 2. POWER BUTTON AND INDICATOR
- 3. CHANNEL PROGRAMME SELECTORS(+/-)
- 4. RECORD/QSR BUTTON
- 5. PAUSE/STILL BUTTON
- 6. CASSETTE COMPARTMENT
- 7. MULTI-FUNCTION DISPLAY
- 8. REWIND/REVIEW BUTTON
- 9. PLAY BUTTON
- 10. FAST FORWARD/CUE BUTTON
- 11. REMOTE SENSOR WINDOW

REAR

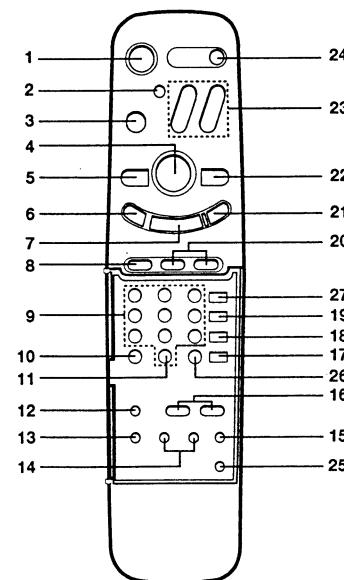


- 1. AERIAL INPUT
- 2. RF OUTPUT
- 3. RF CHANNEL CONTROL
- 4. EURO-AV SOCKET
- 5. PREMIERE SOCKET
- 6. MAINS LEAD

MULTI FUNCTION DISPLAY



REMOTE CONTROL



SECTION 2 CABINET & MAIN FRAME SERVICE FIXTURE CONNECTING METHOD

1. SVC FIXTURE Connecting Method

A. FIXTURE Cable ① Connecting Method.

- Connect the FIXTURE Cable ① between Main C.B.A and Junction C.B.A. (P2J01, P5J03, P2J02)
- At this time, should be in the left side "LEFT" mark on the P.C.B. of the FIXTURE Cable ①. (See Fig. 2-a, 2-c)
- Connect the connector of "MAIN" mark of FIXTURE Cable ① with the Main C.B.A and the connector of "JUNCTION" mark with the Junction C.B.A. (See Fig. 2-a, 2-c)

B. FIXTURE Cable ② Connecting Method.

- Connect the FIXTURE Cable ② between Main C.B.A and Pre-Amp Ass'y. (P0301=P3001)
- At this time, should be in the left side "LEFT" mark on the P.C.B. of the FIXTURE Cable ②. (See Fig 2-a, 2-b)
- Connect the connector of "MAIN" mark of FIXTURE Cable ② with the Main C.B.A and the connector of "JUNCTION" mark with the Pre-Amp Ass'y. (See Fig. 2-a, 2-b)

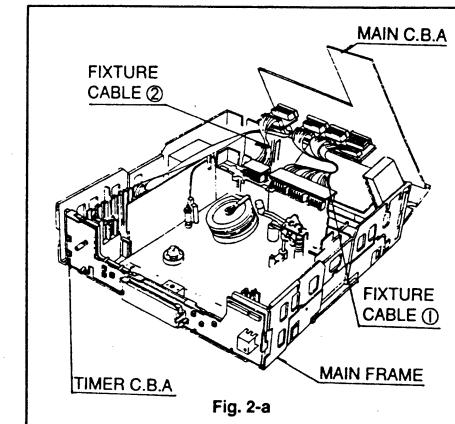


Fig. 2-a

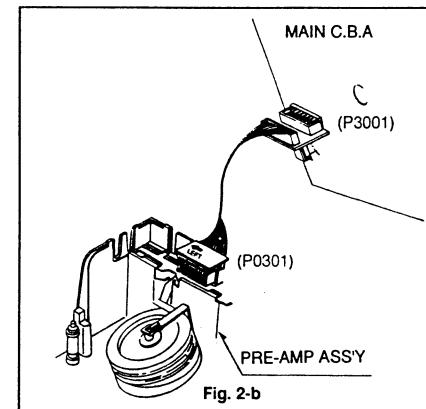


Fig. 2-b

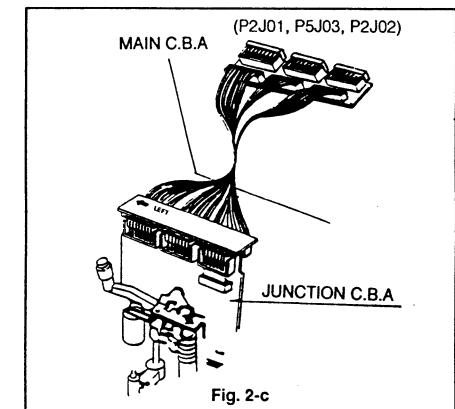
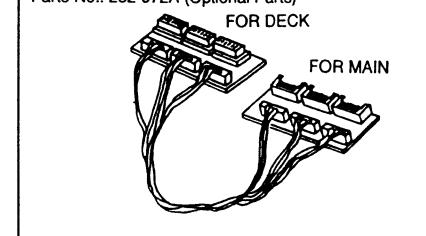


Fig. 2-c

2. Electrical Service Fixture List

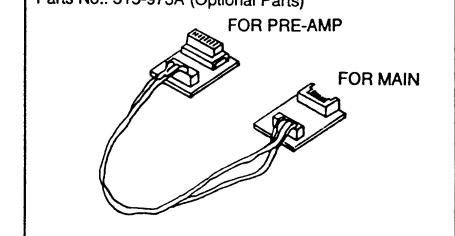
A. Fixture Cable ①.

Parts No.: 232-972A (Optional Parts)



B. Fixture Cable ②.

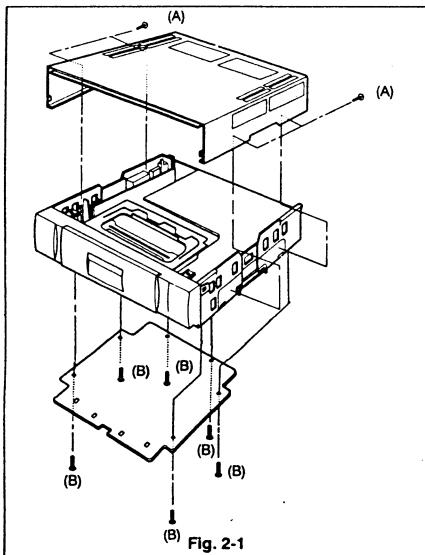
Parts No.: 515-973A (Optional Parts)



CABINET DISASSEMBLY

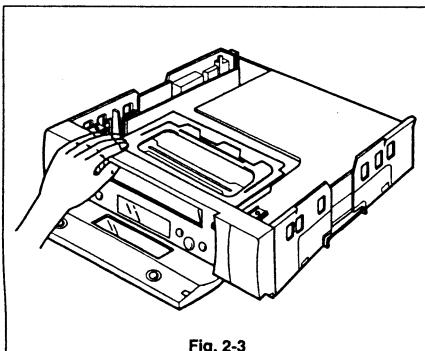
1. Top Case, Bottom Cover

- Release 4 screws (A). (See Fig. 2-1)
- Hold the back of Top Case and lift it up slightly backward to remove it.
- Release 6 screws (B). (See Fig. 2-1)
- Hold the Bottom Cover and pull it slightly forward to remove it.



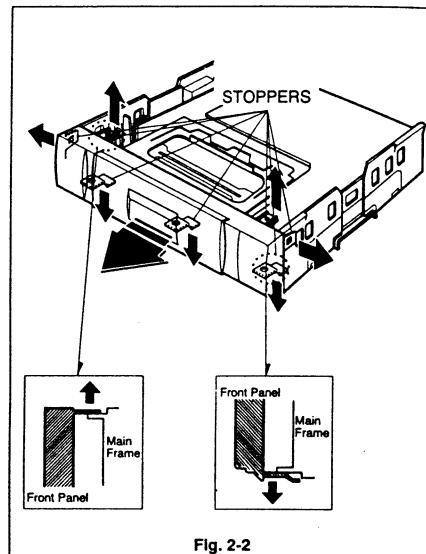
***Caution**

When reassemble the Front Panel, assemble it in condition of inserting the Door Cassette inside, as shown in Fig. 2-3.



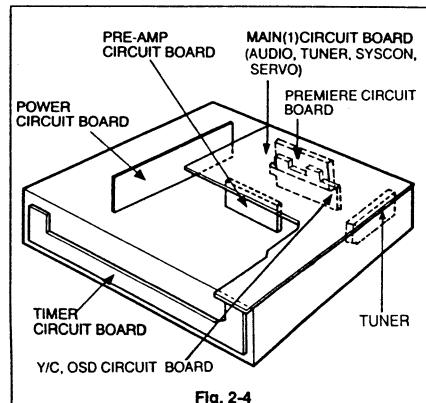
2. Front Panel

- Remove the top Case (See Fig. 2-1).
- Remove the bottom Cover (See Fig 2-1).
- Remove the stoppers on the top of Front Panel.
- Remove the stoppers on the bottom of Front Panel.



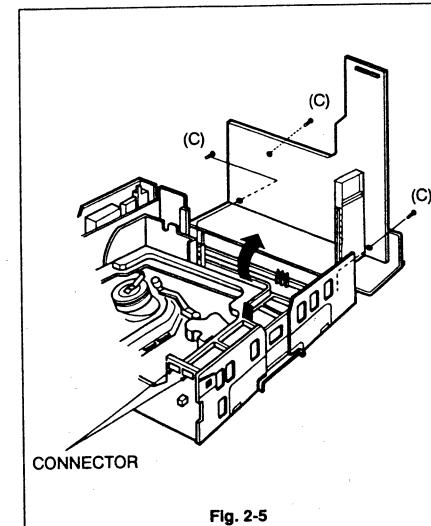
CIRCUIT BOARD DISASSEMBLY

1. Circuit Board Arrangement



2. Main Circuit Board(I)(Y/C, Audio, Tuner, Syscon, Servo)

- Release 3 screws (C). (See Fig. 2-5)
- Disconnect the connector between Main Circuit Board and Timer Circuit Board.
- Disconnect the connector between Main Circuit Board and Power Circuit Board.
- Lift the rear part up and pull the P.C.Board backward.
- Remove the connector for complete removal.



4. Pre-Amp Circuit Board

- Release 2 screw (D)(See Fig. 2-7).
- Remove Pre-Amp Package from Main Frame.
- Remove bracket Pre-Amp from Pre-Amp Package.
- Remove Pre-Amp Circuit Board from Pre-Amp Package.

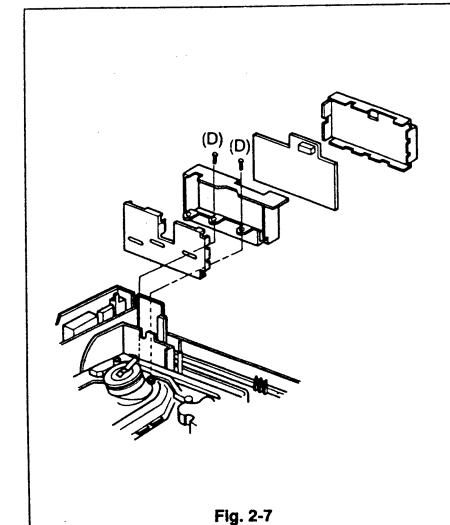


Fig. 2-7

5. Power Circuit Board

- Remove Main(I) P.C.Board (See Fig. 2-5).
- Release 3 screws(E). (See Fig. 2-8)

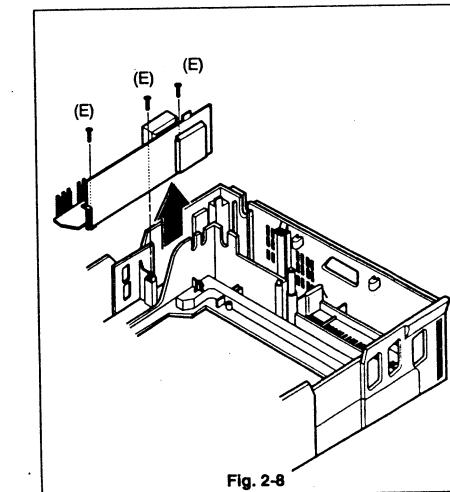
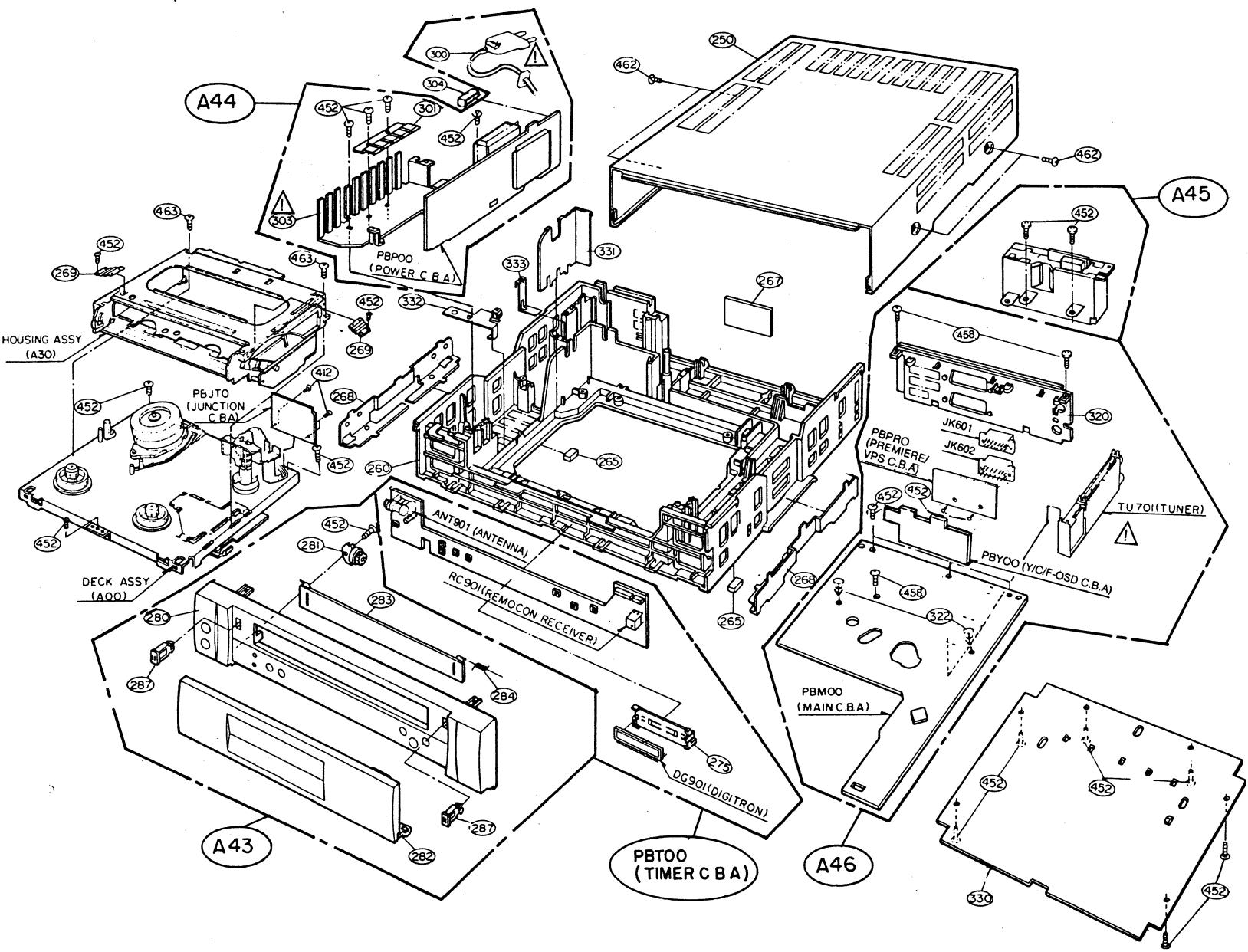


Fig. 2-8

EXPLODED VIEWS

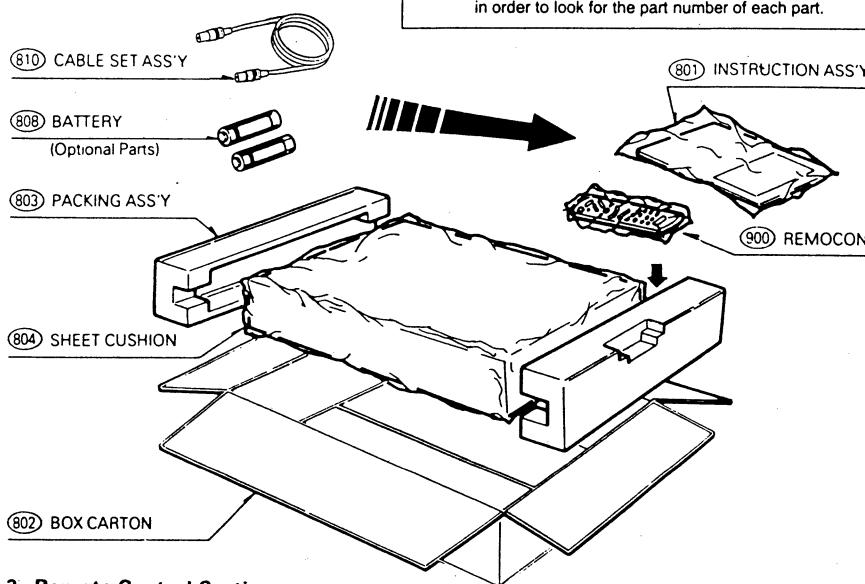
1. Cabinet & Main Frame Section



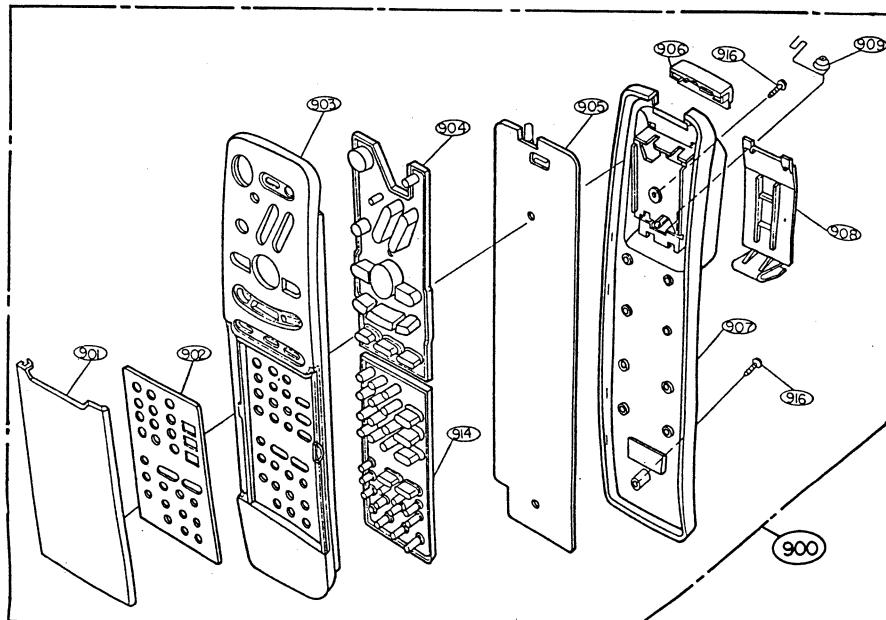
NOTE) 1. Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.
2. The components identified by mark ▲ are critical for safety.

2. Packing Accessory Section

NOTE) Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.



3. Remote Control Section



SECTION 3 ELECTRICAL

ELECTRICAL ADJUSTMENT PROCEDURES

Electronic Test Equipment Requirement :

• Oscilloscope	• Frequency Counter	• Recording Tape
• Video Signal Generator	• Digital Multimeter	
• Modem Tester	• + Driver	
• Level Meter	• Test Tape (SP)	

1. Servo Circuit

1) ± PG Adjustment

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Playback	6.5H ± 0.5H (416μsec, 1H=64μsec)	W255 (H.SW TP) Video Out Terminal	VR201

Purpose :

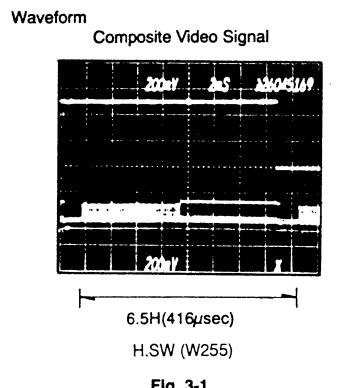
It is for the phase dividing of the Video A,B heads with 180° and the exact tracing of each track to meet head switching point with VHS spec.

Procedure :

- Playback a PAL / SP test tape.
- Connect CH-1 terminal of oscilloscope to W255 H.SW, and CH-2 terminal to Video out terminal of VCR.
- Trigger the complex Video signal of CH-2 to CH-1 H.SW, and adjust VR201 so that the distance from A(B) head selection point of H.SW signal to the starting point of horizontal synchronized signal is 6.5H (416μsec, 1H=64μsec).

Reference)

- ± PG adjustment is practiced in the state of maximum RF level and locked servo system.
- The deviation between A/B Head adjustment location should be within ± 0.5H(32μsec).
- The deviation between the specification of adjustment and the practical measurement value should be within ± 0.5H(32μsec).
- Oscilloscope and VCR set should be connected with GND.



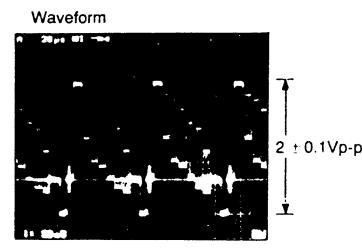
2. Y/C Circuit

1) EE Level Adjustment

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Stop	2 ± 0.1Vp-p	Video Out TP	VR302 EE Level

Procedure :

- Connect the Video Signal Generator to Video in terminal.
- Connect CH-1 terminal of the oscilloscope to Video Out TP.
- Adjust VR302 so that the value from the lower part of synchron to 100% white signal is $2 \pm 0.1V_{p-p}$.



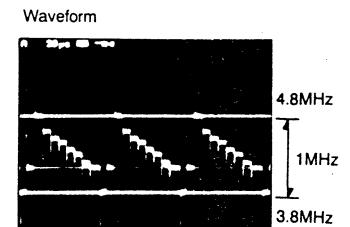
2) FM Carrier Frequency Adjustment

- A. With Modem Tester

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Stop	White Peak: $4.8 \pm 0.05MHz$ Sync.Tip: $3.8 \pm 0.05MHz$	IC301 Pin ④ (CAR/DEV TP)	VR301

Procedure :

- Connect the Video Signal Generator to Video in terminal.
- Connect CH-1 terminal of the oscilloscope to modem tester output terminal. (But the set and the modem tester should be connected with 1:1 probe).
- Connect input terminal of modem tester to IC301 pin ④.
- Input the video signal of 100% white to Video Input Jack.
- The terminal position of modem tester is operated to be ATT. 0dB, PAL/SECAM mode, Demod, Marker on.
- Adjust VR301 to right side in left maximum state so that 3.8MHz marker on scope is agreed with the lower part of sync.



- B. Without Modem Tester

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
E.E mode (without signal)	$3.81 \pm 0.02MHz$	IC301 Pin ④ (CAR/DEV TP)	VR301

Procedure :

- Connect the probe of Frequency Counter to CAR/DEV TP.
- Adjust VR301 so that the Frequency Counter is $3.81 \pm 0.02MHz$.

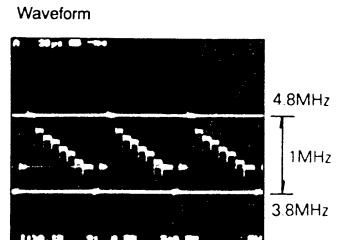
3) FM Deviation Frequency Adjustment

- A. With Modem Tester

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Stop	$1 \pm 0.05MHz$	IC301 Pin ④ (CAR/DEV TP)	VR303

Procedure :

- Connect the Video Signal Generator to Video in terminal.
- Connect CH-1 terminal of the oscilloscope to modem tester output terminal. (But the set and the modem tester should be connected with 1:1 probe).
- Connect input terminal of modem tester to IC301 pin ④.
- Input the video signal of 100% white to Video Input Jack.
- The terminal position of modem tester is operated to be ATT. 0dB, PAL/SECAM mode, Demod, Marker on.
- Adjust VR303 to right side in left maximum state so that 4.8MHz marker on scope is agreed with the level of 100% white signal.



- B. Without Modem Tester

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Playback	$2.0 \pm 0.1 \text{Vp-p}$	Video Out TP	VR303

Procedure :

- a. Connect CH-1 terminal of the oscilloscope to Video Out TP.
- b. Input the Video Signal of 100% white to Video Input Jack.
- c. Adjust VR303 so that the Video Playback Level is $2.0 \pm 0.1 \text{Vp-p}$ after recording.

4) Playback Luminance Level Adjustment

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Playback(SP mode)	$2 \pm 0.1 \text{Vp-p}$	Video Out TP	VR305

Procedure :

- a. Connect CH-1 terminal of the oscilloscope to Video Out TP.
- b. Playback a PAL SP test tape (with 100% white signal).
- c. Adjust VR305 so that the Video waveform is $2 \pm 0.1 \text{Vp-p}$.

Waveform

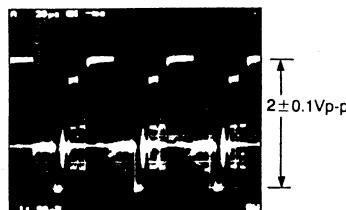


Fig. 3-5

5) Recording Luminance Level Adjustment

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Record	$200\text{mVp-p} \pm 10\text{mVp-p}$	REC-Y TP	VR304

Procedure :

- a. Connect the Video Signal Generator to Video input terminal.
- b. Connect CH-1 terminal of the oscilloscope to REC-Y TP.
- c. Adjust VR304 so that the luminance FM output is $200\text{mVp-p} \pm 10\text{mVp-p}$.

Waveform

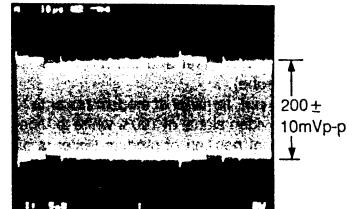


Fig. 3-6

3. Audio Circuit

1) Audio R/P Head Azimuth Adjustment

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Playback	Maximum	Audio Out Terminal	R/P Head Azimuth

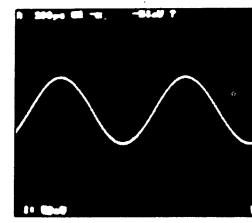
Purpose :

This is for adjusting Audio playback level to specification.

Procedure :

- a. Connect the Level Meter to Audio out terminal.
- b. Adjust Angle of R/P Head Azimuth so that 1KHZ

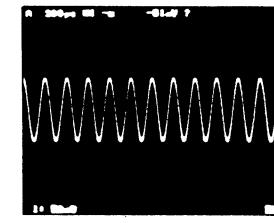
Waveform



1KHz

output level of Level Meter is maximum after playing the standard tape.

- c. At this time, make 6KHz level be maximum to adjust Angle of R/P Head azimuth.



6KHz

Fig. 3-7

2) Record Oscillation Frequency Adjustment

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Record	$70\text{KHz} \pm 5\text{KHz}$	C403	T401(Oscillation Coil)

Purpose :

This is for adjusting the oscillation frequency to specification in recording.

Procedure :

- a. Connect CH-1 terminal of the oscilloscope to C403.
- b. Connect the frequency counter to C403.

- c. Confirm that the oscillation frequency in recording is $70\text{KHz} \pm 5\text{KHz}$.

- d. At this time, adjust OSC coil(T401) and make the oscillation frequency fit to $70\text{KHz} \pm 5\text{KHz}$.

3) Record Bias Adjustment

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Record	2.6mVRMS	R401 Both Terminal	VR401

Purpose :

This is adjusting the bias current to specification in recording.

Procedure :

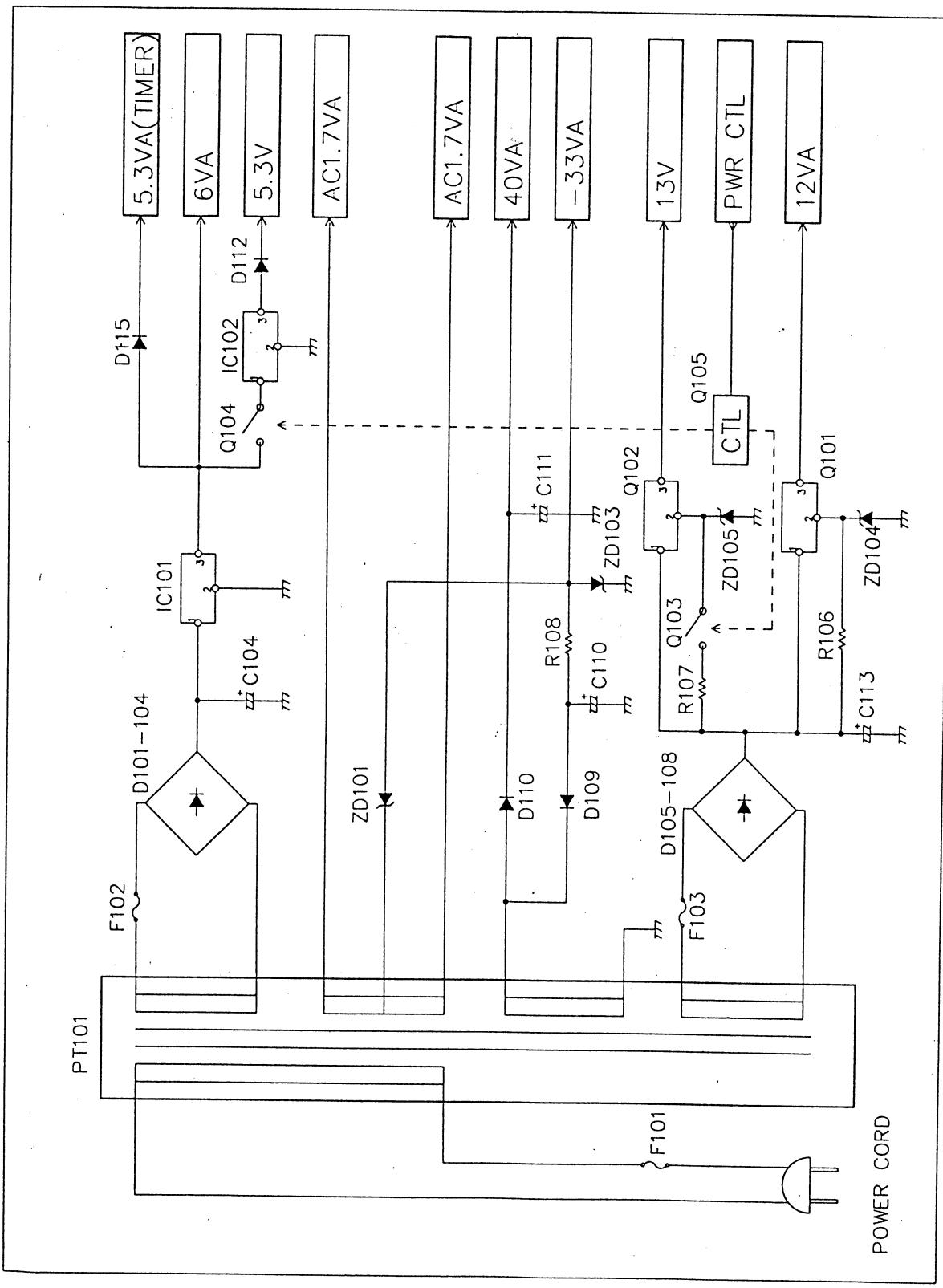
- a. Connect the Level Meter terminal to both terminal R401.

- b. Confirm that the Oscillation Voltage in recording is 2.6mVRMS .

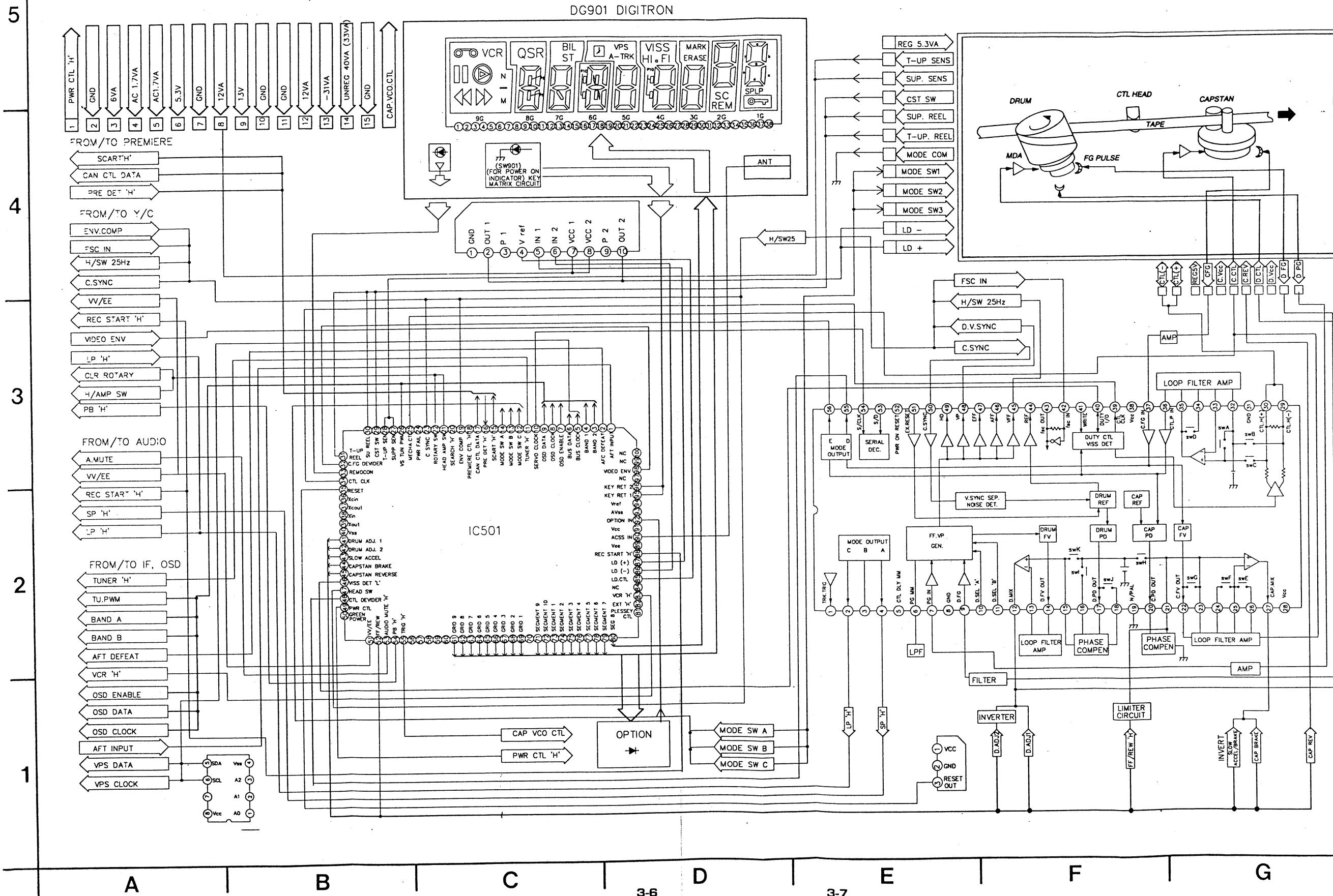
- c. At this time, adjust VR401 and make the oscillation voltage fit to specification.

BLOCK DIAGRAMS

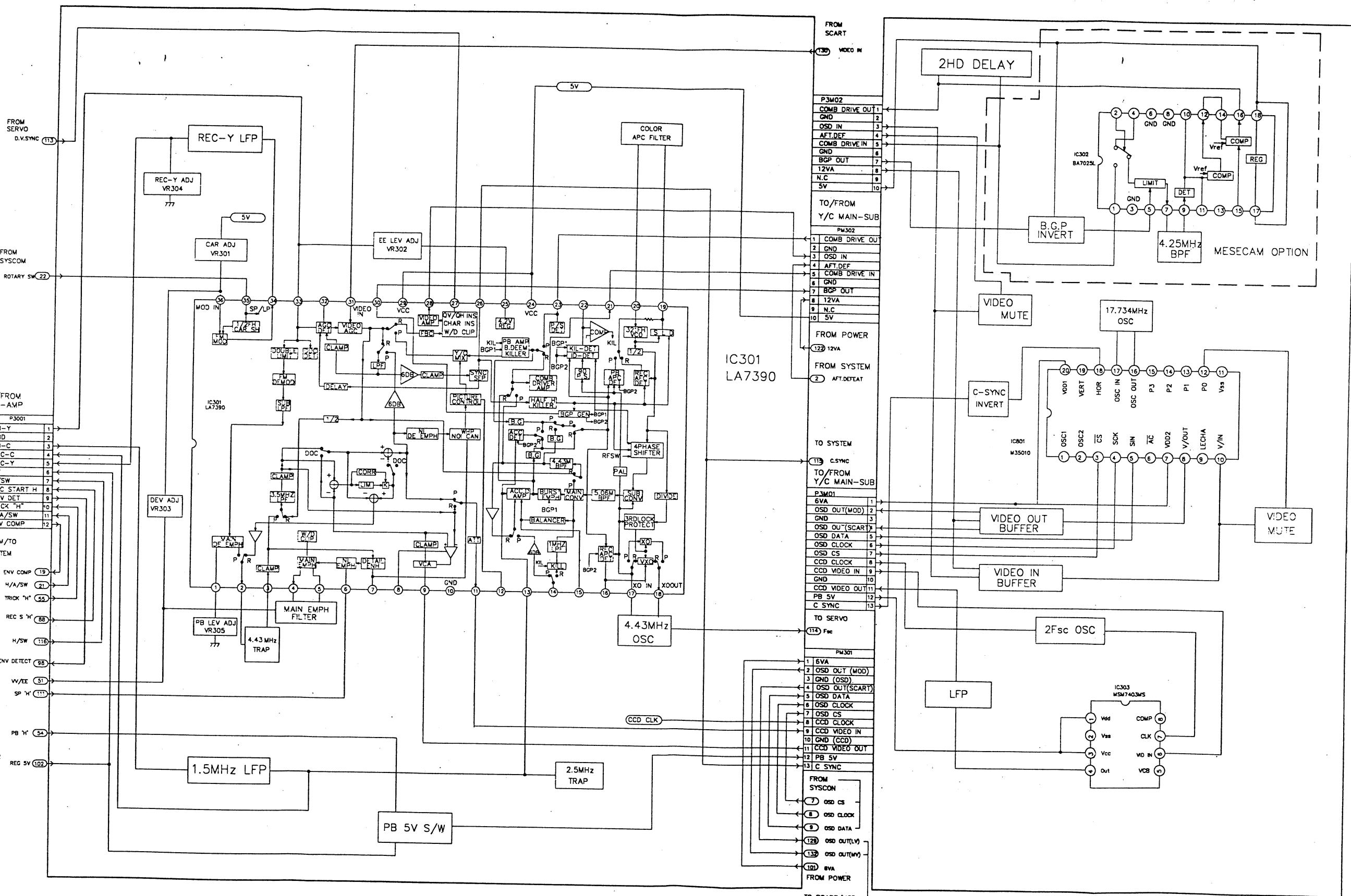
1. Power Block Diagram



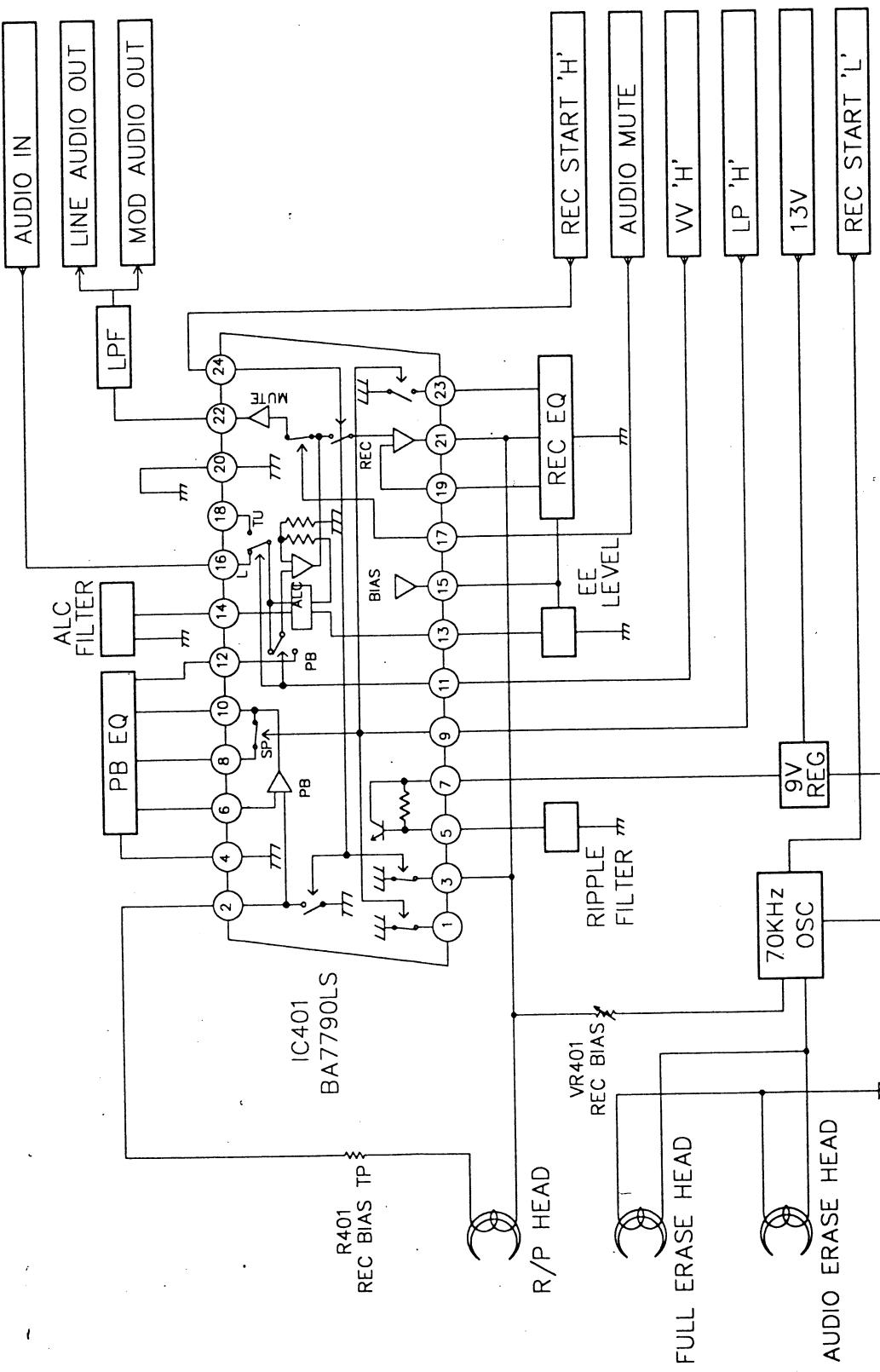
2. Main System (Servo, Syscon, Timer) Block Diagram



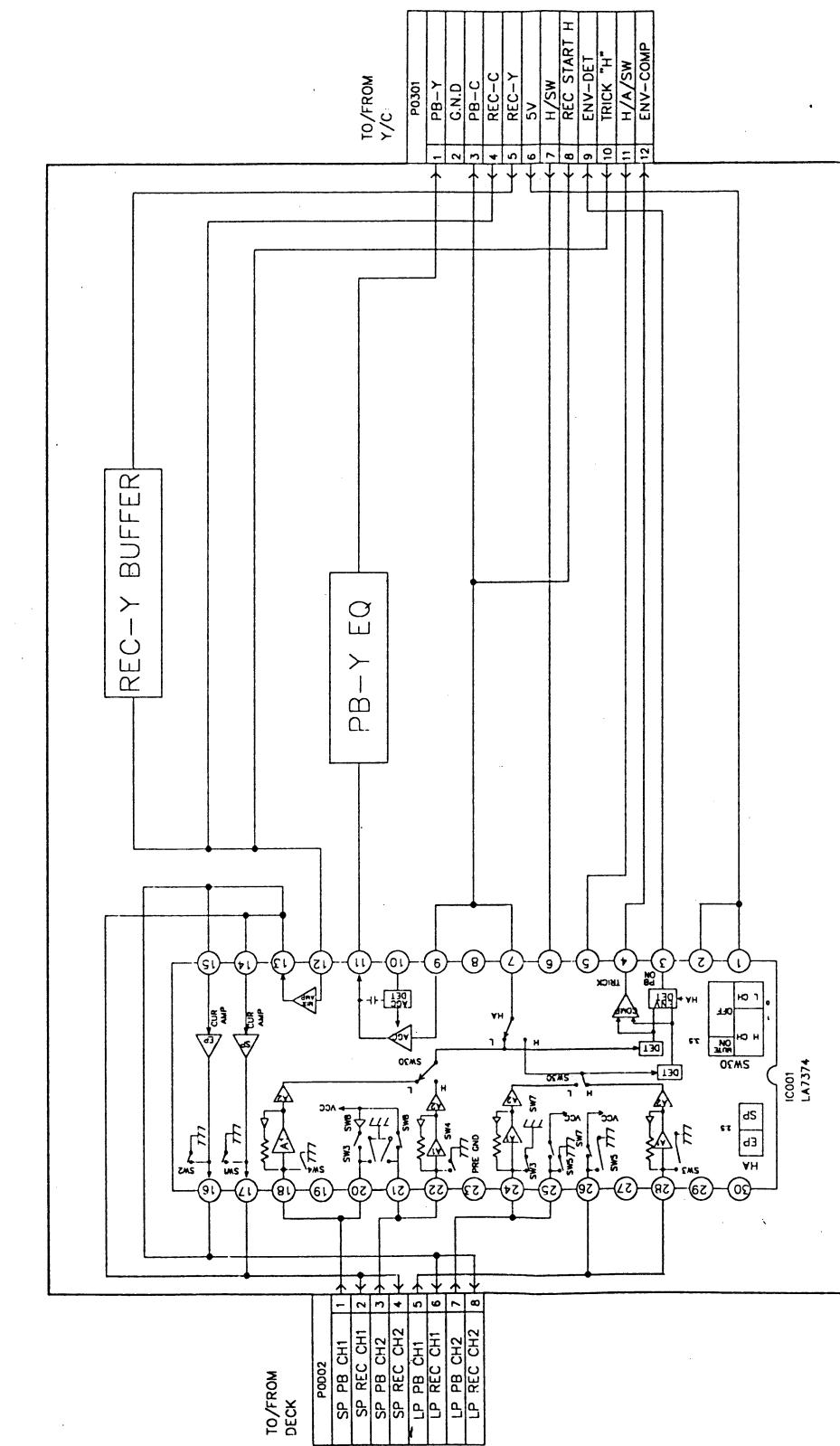
3. Y/C & Function OSD Block Diagram



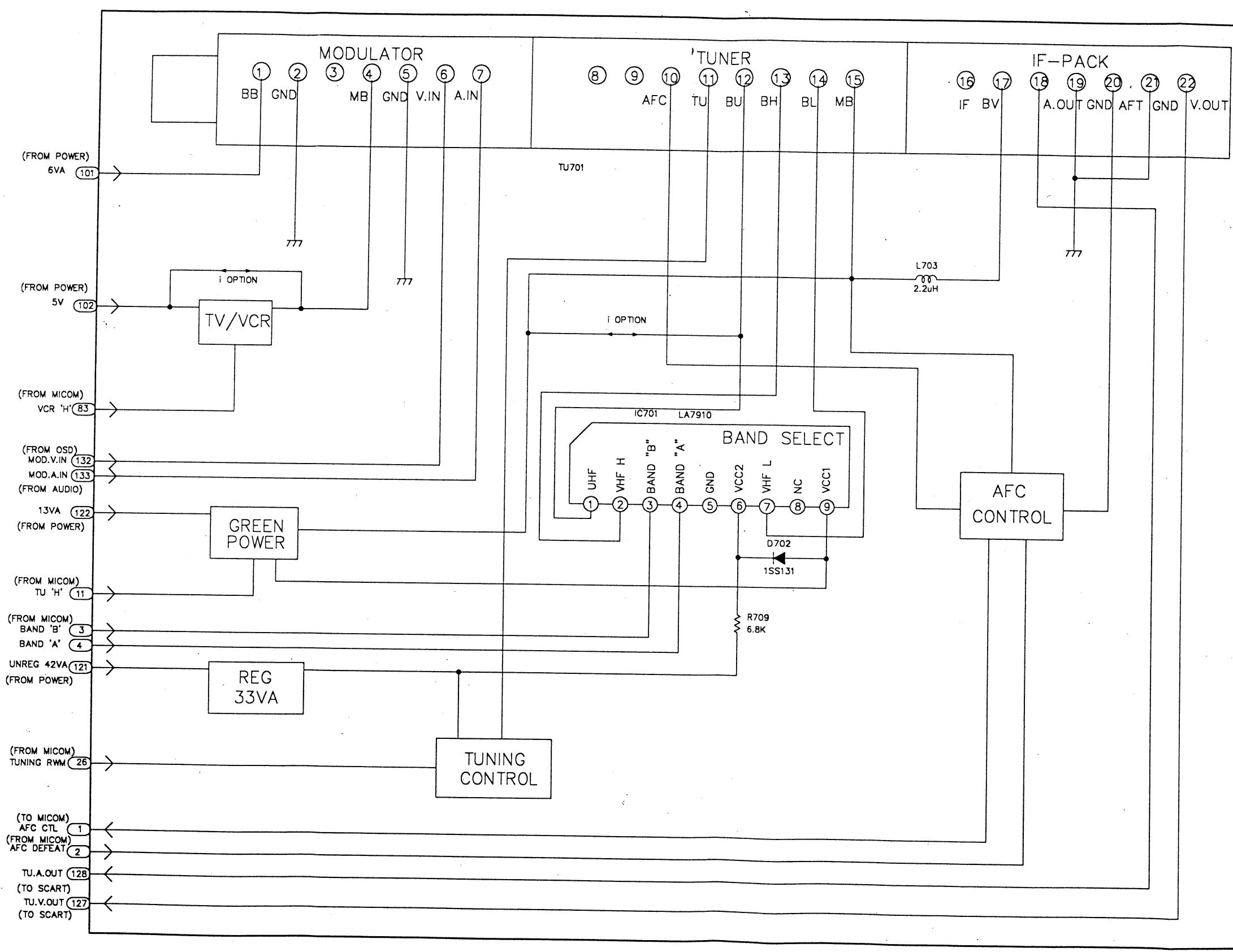
4. Audio Block Diagram



5. Pre-Amp Block Diagram



6. Tuner/IF Block Diagram



A

B

C

3-12

D

3-13

E

F

G

H

7. Premiere, VPS & PDC Block Diagram

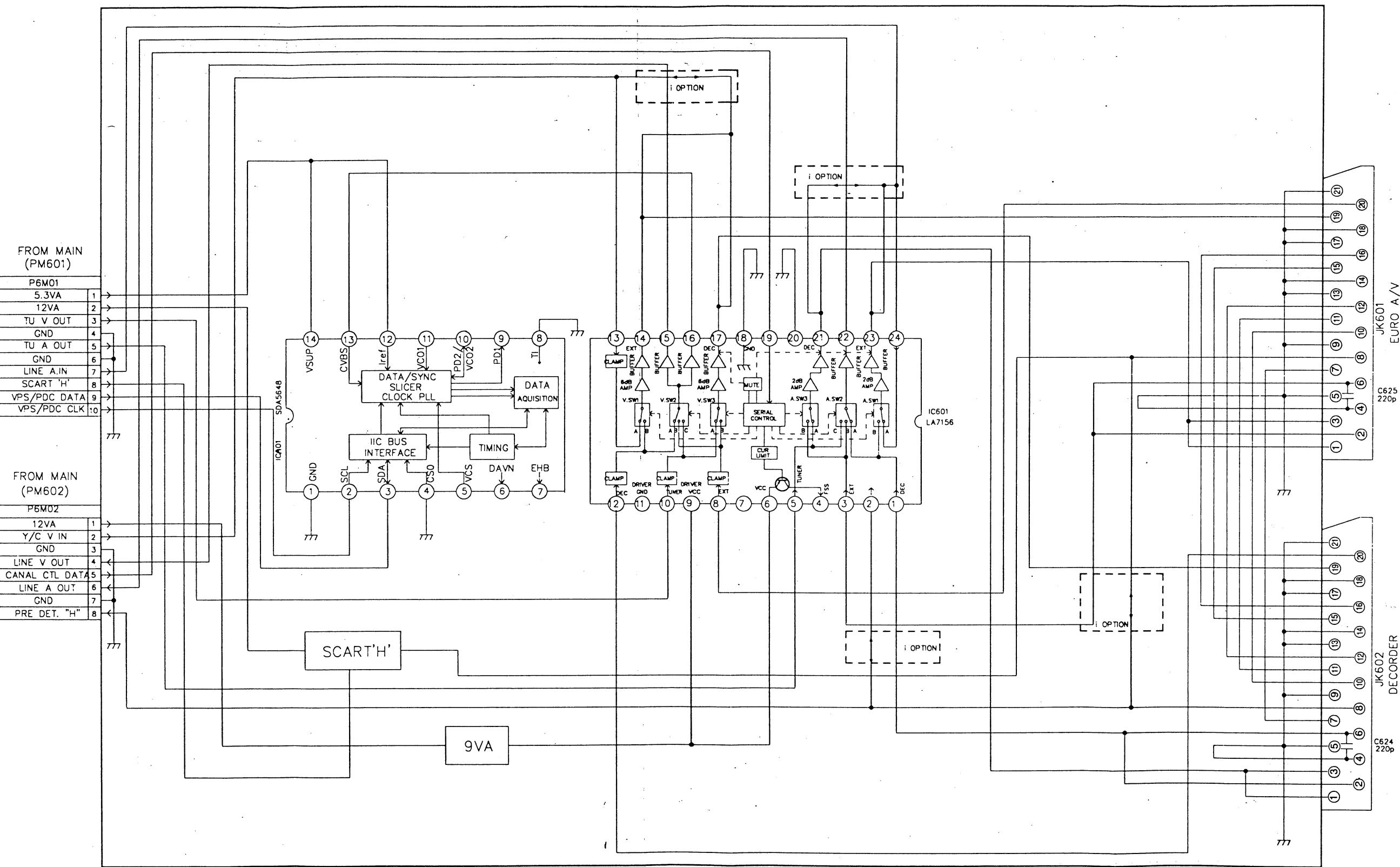
5

4

3

2

1



3-14

3-15

A

B

C

D

E

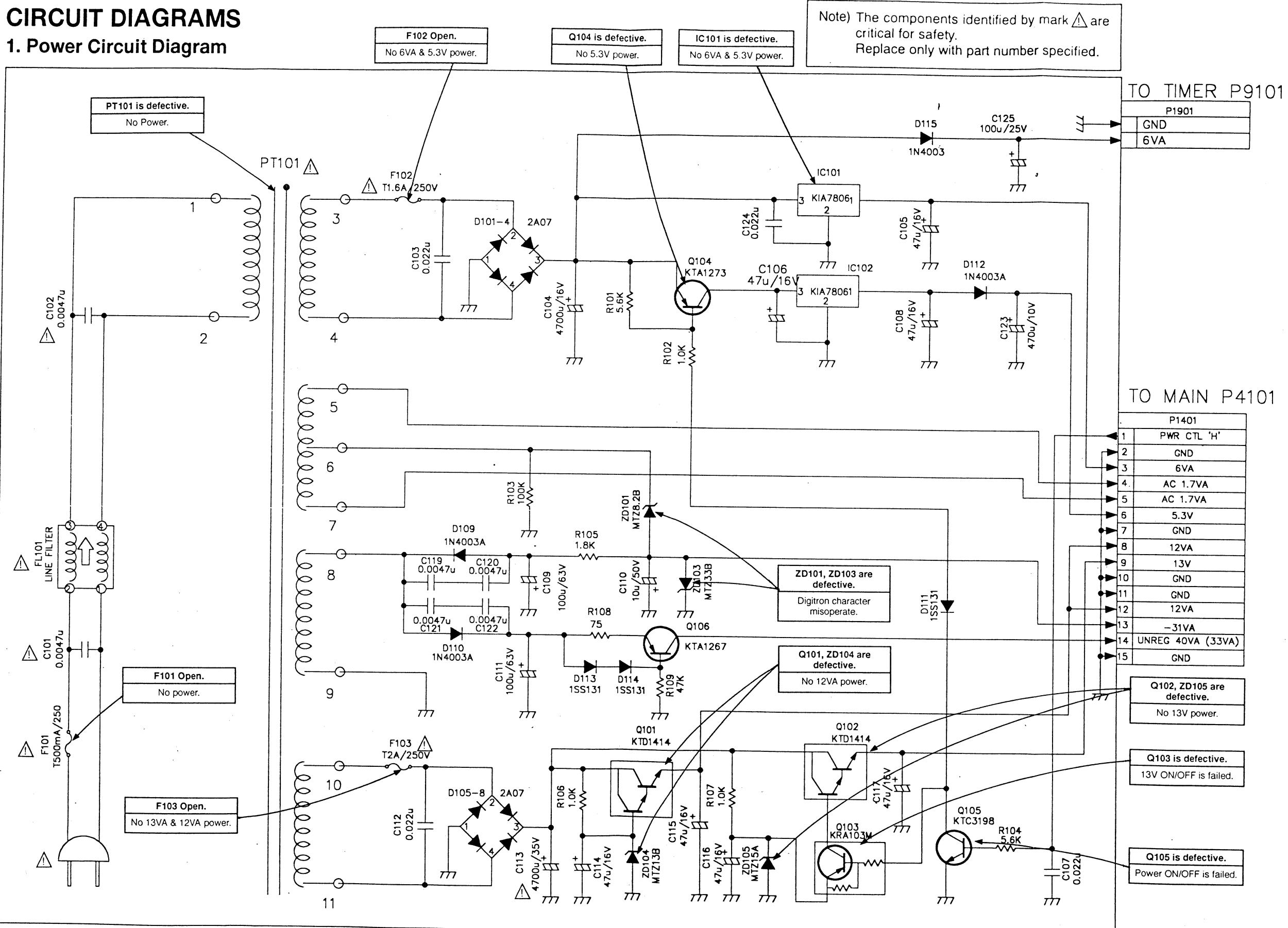
F

G

H

CIRCUIT DIAGRAMS

1. Power Circuit Diagram



A

B

C

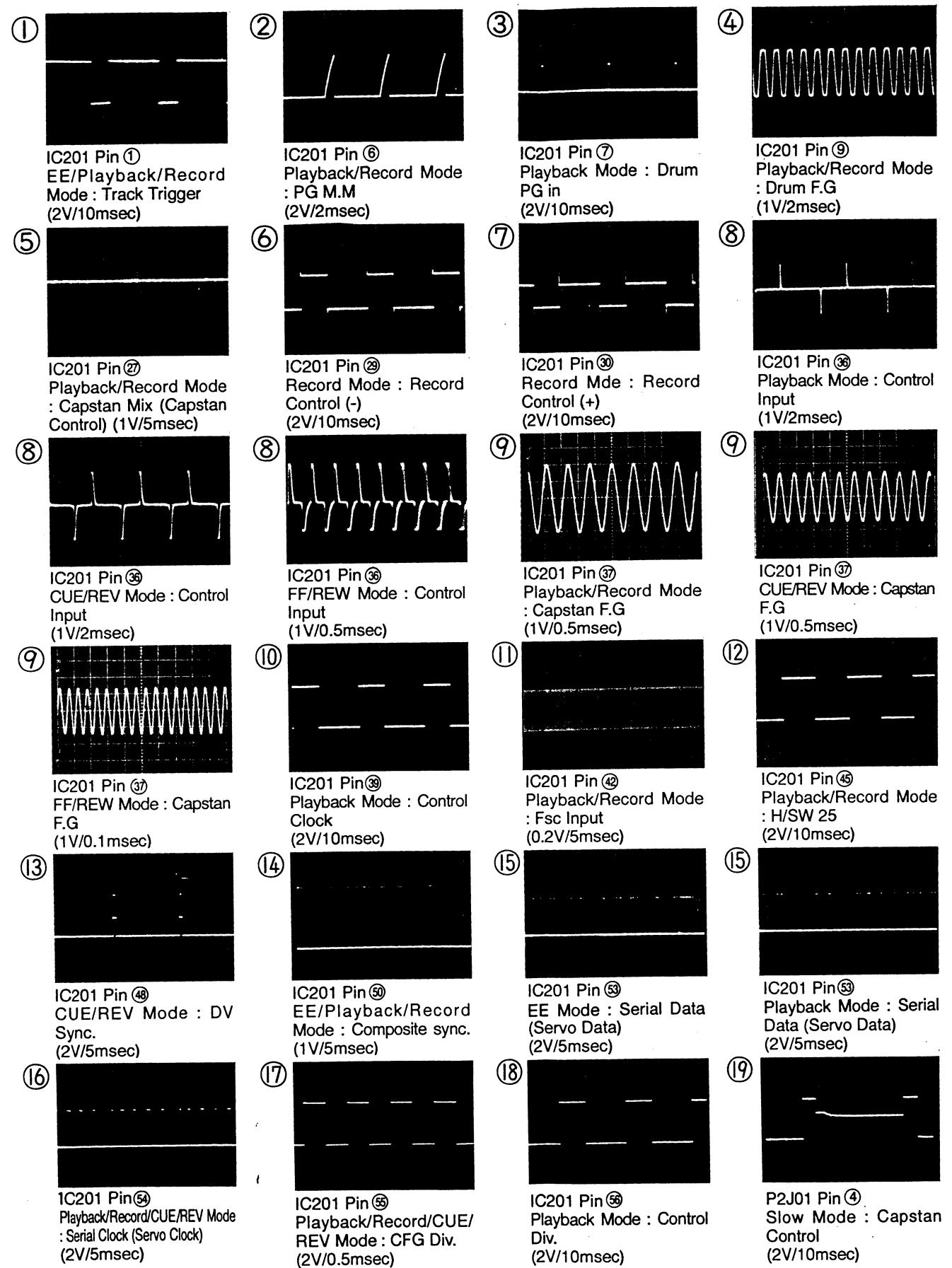
D

E

F

G

* Servo Waveform



* Servo IC Voltage Sheet
IC201 (HD49756NT)

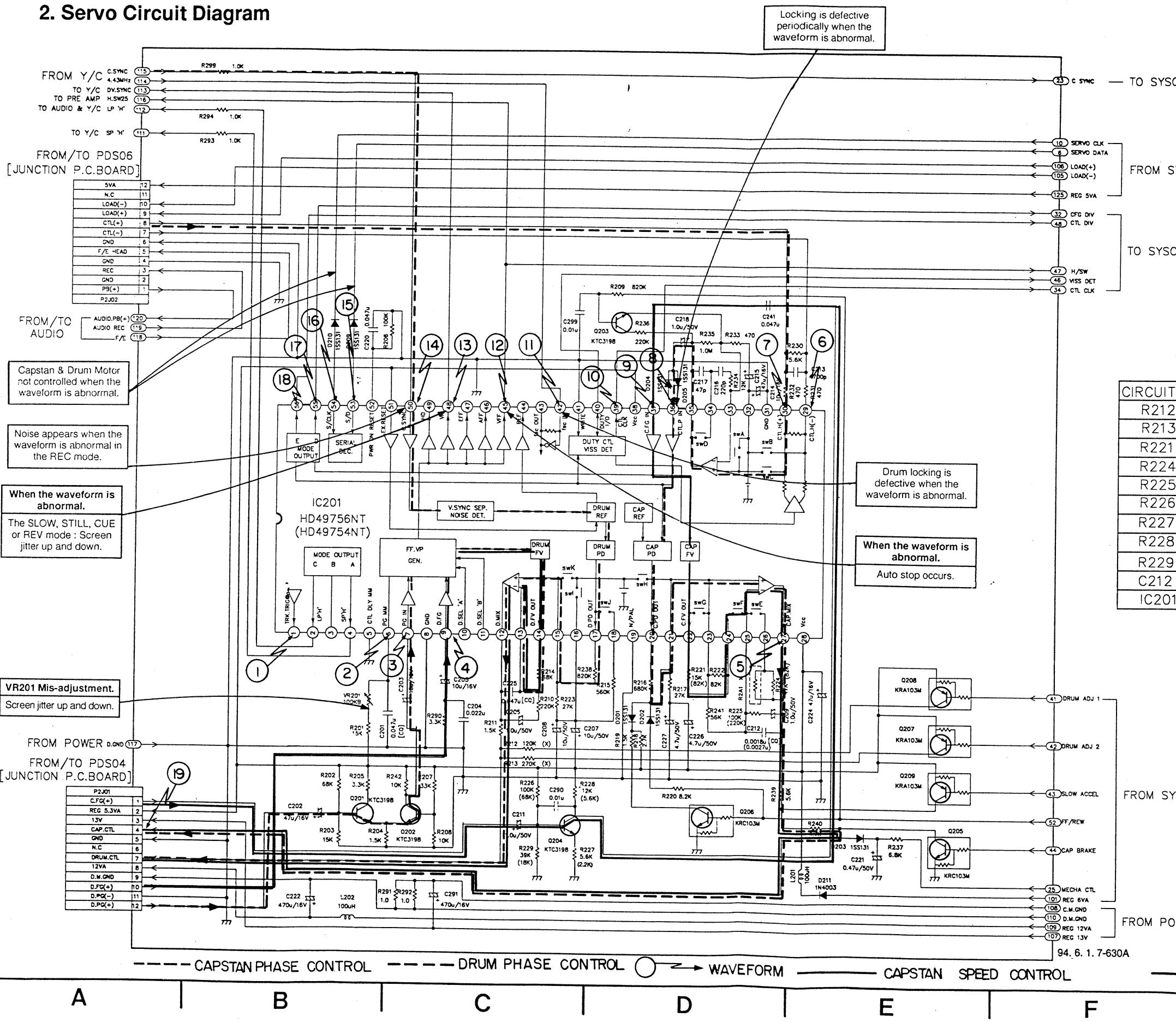
Pin No	Mode	Playback	Record	Pin No	Mode	Playback	Record
①		4.9V 0V	4.9V 0V	㉓		4V 2.4V 0.8V	2.4V
②		0V	0V	㉔		3.6V 1.6V	3.6V 1.6V
③		0V	0V	㉕		4.9V	4.9V
④		4.9V 0V	4.9V 0V	㉖		4.9V 0V	4.9V 0V
⑤		2.2V 0V	2.2V 0V	㉗		4.9V	4.9V
⑥		5.1V 2V	5.1V 2V	㉘		4.9V 0V	4.9V 0V
⑦		0V	0V	㉙		2.7V 2.3V	2.7V 2.3V
⑧		3.8V 2.2V	3.8V 2.2V	㉚		3.8V	3.5V
⑨		2.6V 2.6V	2.6V 2.6V	㉛		2.0V	1.5V
⑩		2.4V 2.4V	2.4V 2.4V	㉜		4.9V 0V	4.9V 0V
⑪		2.4V 2.4V	2.4V 2.4V	㉝		4.9V 0V	4.9V 0V
⑫		2.4V 2.4V	2.4V 2.4V	㉞		4.9V 0V	4.9V 0V
⑬		2.4V 2.4V	2.4V 2.4V	㉟		4.9V 0V	4.9V 0V
⑭		2.4V 2.4V	2.4V 2.4V	㉟		0V	0V
㉑		4.8V 4.3V	4.8V 4.3V	㉟		4.9V 3.6V	4.9V 3.6V
㉒		0.5V 0V	0.5V 0V	㉟		4.9V	4.9V
㉓		2.4V	2.4V	㉟		0.6V	0.6V
㉔		4.8V 4.3V	4.8V 4.3V	㉟		4.9V	4.9V
㉕		1.2V 0V	1.2V 0V	㉟		0.6V	0.6V
㉖		0V 2.4V	0V 2.4V	㉟		4.9V 0V	4.9V 0V
㉗		2.4V 2.4V	2.4V 2.4V	㉟		4.9V 0V	4.9V 0V
㉘		4.4V 2.4V	4.4V 2.4V	㉟		4.9V 0V	4.9V 0V
㉙		0.4V 2.4V	0.4V 2.4V	㉟		4.9V 0V	4.9V 0V

* Servo TR Voltage Sheet (PB/REC/EE mode)

Port	Emitter	Collector	Base
TR No			
Q201	0.6/0.6/0.6	4.9/4.9/4.9	0.9/0.9/0.9
Q202	0.6/0.6/0.6	1/1/1	1.2/1.2/1.2
Q203	2.45/2.45/2.45	2.4/2.4/2.4	0/0/0
Q204	0.6/0.6/0.6	1/1/1	2.2/2.2/2.2
Q205	0/0/5	2.6/2.6/0	0/0/0
Q206	0/0/0	5/5/5	0/0/0
Q207	4.9/4.9/4.9	2.2/2.2/0	4.9/4.9/4.9
Q208	4.9/4.9/4.9	2.6/2.6/0	4.9/4.9/4.9
Q209	4.9/4.9/4.9	2.2/2.2/0	4.9/4.9/4.9

2. Servo Circuit Diagram

5



OPTION TABLE

CIRCUIT NO	4HEAD	2HEAD
R212	120K	X
R213	270K	X
R221	15K	82K
R224	47K	82K
R225	100K	220K
R226	100K	68K
R227	5.6K	2.2K
R228	12K	5.6K
R229	39K	18K
C212	CQ182	CQ272
IC201	HD49756NT / HD49754NT	

FROM SYSCON

FROM POWER

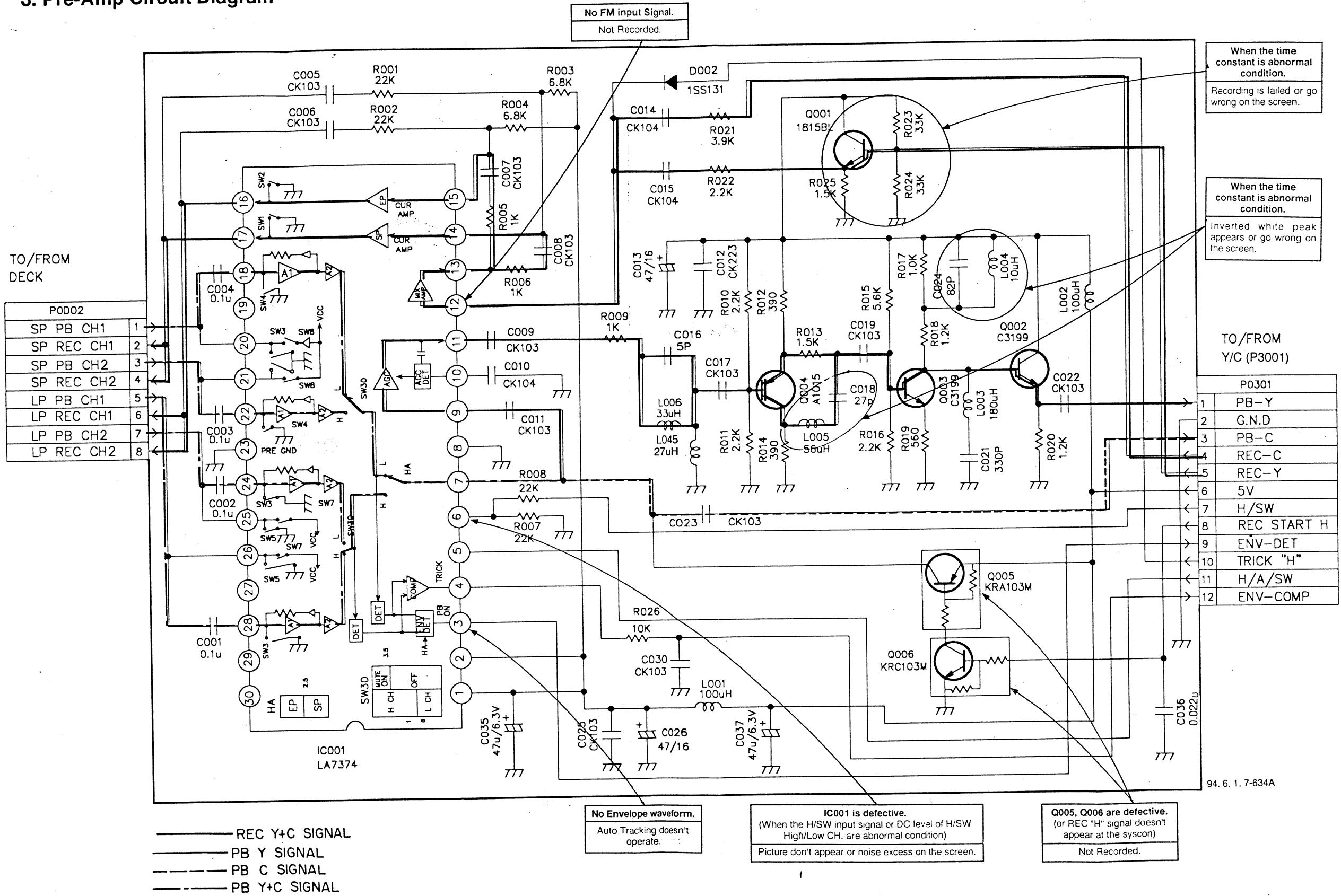
A B C D E F G H

— CAPSTAN PHASE CONTROL — DRUM PHASE CONTROL ○ → WAVEFORM — CAPSTAN SPEED CONTROL — DRUM SPEED CONTROL

Locking is defective periodically when the waveform is abnormal.

94. 6. 1. 7-630A

3. Pre-Amp Circuit Diagram



A

B

C

D

E

F

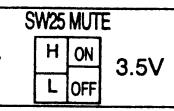
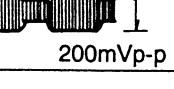
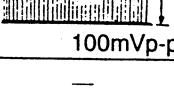
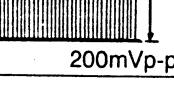
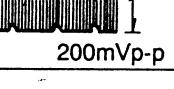
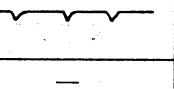
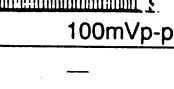
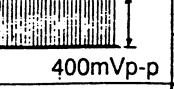
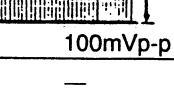
G

H

3-22

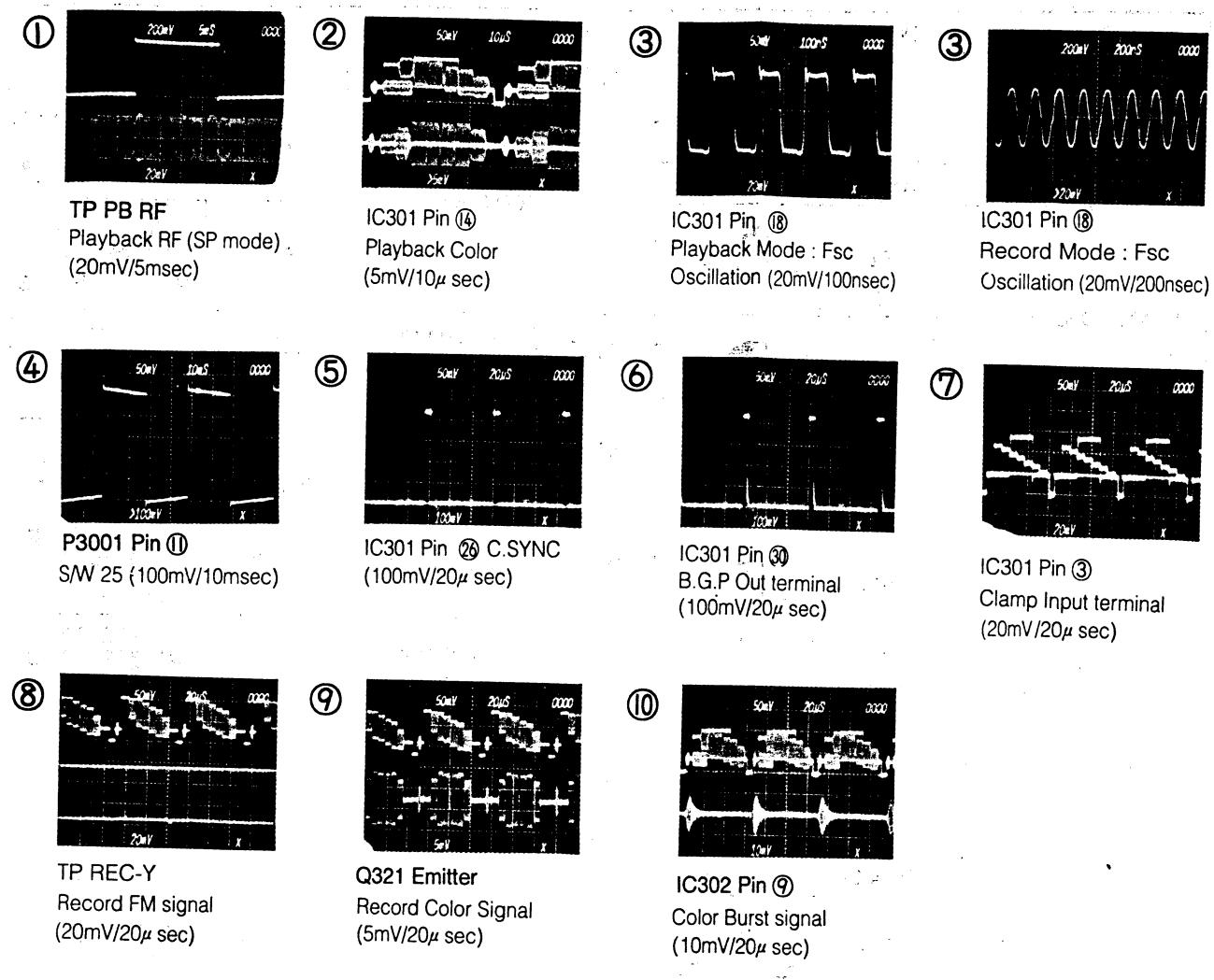
3-23

* Pre-Amp IC Voltage Sheet

Pin	Pin Function	DC Volt.	Waveform	Pin	Pin Function	DC Volt.	Waveform
1	Vcc	5V	—			PB 1.6V	—
2	Vcc	5V	—			REC Current Amp Input	
3	PB Envelope Detection Output	PB 4V	—	15	REC Current Amp Input	REC 1.7V	
4	PB Envelope Comparator Output *Special Playback mode : LP>SP H(4.2V)	REC 2.4V	—	16	REC Current Amp Output	0V	—
5	PB, REC, HA Control *H=LP mode L=SP mode (H : More than 2.5V)	0V	—	17	REC Current Amp Output	PB 0V	—
6	PB SW25 Control REC MUTE Control	2.5V		18	PB Pre-Amp Input	PB 0.6V	—
7	PB Chroma Output	PB 2V		19	N.C.	REC 0V	
8	Ground	0V	—	20	REC mode Select S/W	REC 4.1V	
9	PB FM AGC Input	PB 3.6V		21	REC mode Select S/W	PB 0V	—
10	PB FM AGC Detect	REC 3.5V	—	22	PB Pre-Amp Input	REC 4.2V	—
11	PB FM AGC Output	PB 0.7V		23	GND for Pre-Amp	PB 0.6V	—
12	PB Special Playback Control (Special PB mode : More than 3.5V)	REC 0V	—	24	PB Pre-Amp Input	REC 0V	
13	REC MIX Amp	PB 2.4V		25	REC mode Select S/W	PB 0V	—
14	REC Current Amp Input	REC 4V	—	26	REC mode Select S/W	REC 4.2V	—
		PB 2.5V	—	27	N.C.	PB 0V	—
		REC 1.6V	—	28	PB Pre-Amp Input	REC 4.2V	—
		PB 0V	—	29	N.C.	PB 0.6V	—
		REC 2.2V		30	N.C.	REC 0V	
		PB 1.6V	—			REC 1.8V	—
		REC 1.8V	—				

IC001 (LA7374)

* Y/C Waveform (When taking a photograph of waveform, set probe of oscilloscope to 10:1)



* Function OSD IC Voltage Sheet

Normal (Blue Screen)									
5.12 (5.1)	1.63 (1.5)	4.55 (0)	2.35 (2.3)	2.35 (2.4)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
20					15				
1					IC801 (M35010)				
2.37 (2.4)	2.37 (2.4)	4.9 (4.9)	5.14 (5.1)	5.14 (0)	5.09 (5.1)	5.12 (5.1)	2.83 (2.3)	3.56 (3.5)	2.84 (2.7)

* Function OSD TR Voltage Sheet
(Color Bar Normal Mode)

Port TR No.	Emitter	Collector	Base
Q803	2.4	12.2	2.5
Q804	0	1.76	0
Q805	0	3.76	0
Q807	3.12	3.12	3.76
Q810	5.52	0	4.83

(Blue back screen state after MENU, PRESET selected)

Port TR No.	Emitter	Collector	Base
Q803	2.4	12.5	2.5
Q804	0	0	0.8
Q805	0	0	4.38
Q807	1.68	2.73	0
Q810	5.51	0	4.82

* Y/C IC Voltage Sheet
IC301 (LA7390)

Pin	Pin Function	DC Volt	Waveform	Pin	Pin Function	DC Volt	Waveform
1	Main Deemphasis I.	PB		10	Ground	0V	—
		REC 0V	—	11	CCD Drive	PB	
		REC				REC	
2	Main Deemphasis II.	PB		12	Picture Control	2.5V	—
		REC		13	ACC Filter	PB 2.2V	
		REC				REC 1.5V	
3	CLAMP Input	PB		14	Low Band Conversion Chroma Input	PB 2.9V	
		REC				REC 3V	
		REC				REC 3V	
4	REC/PB select S/W (PB mode : More than 3.8V)	PB 4.2V	—	15	AGC Filter	PB 2.2V	—
		REC				REC 2.4V	—
		REC				PB 2.1V	—
5	Main Emphasis Filter	PB 4.2V	—	16	REC APC Filter	REC 2.1V	—
		REC				REC 2.1V	—
		REC				REC 2.1V	—
6	SPS/W(SP mode : More than 3.9V)	PB 4.3V	—	17	Xo Input 4.43MHz	PB 3.7V	
		REC 4.3V	—			REC 3.7V	
		REC 4.3V	—			REC 3.7V	
7	Non Linear Emphasis Filter	PB		18	Xo Output 4.43MHz	PB 2.4V	
		REC				REC 3.4V	
		REC				REC 3.4V	
8	VCA Filter	PB 3V	—	19	SLD(Side Locked Detect) Filter	3.1V	—
		REC 2.3V	—			APC Filter	
		REC 2.3V	—			AFC Filter	
9	VCA Input	PB		20	AFC Filter	REC 3.15V	
		REC 1.9V	—			REC 3.15V	

Pin	Pin Function	DC Volt	Waveform	Pin	Pin Function	DC Volt	Waveform
21	Comb Filter Drive	PB 2.4V		29	Vcc 1	5V	—
		REC 2.4V		30	BGP Output	—	
22	Color Killer Filter (Color mode : 2V Killer mode : 3.1V)	2V	—	31	Video Signal Input	—	
		2V		32	AGC Filter	REC/PB1.4V	—
23	PB Amp Input MESECAM-H (MESECAM mode : More than 4V in the condition of PB mode)	2V		33	PB FM Input	PB 3.3V	
		2V		34	AGC Adjust	REC 3.3V	—
24	Vcc 2	5V	—	34	DOC Stop Control (DOC stop for more than 3.9V)	PB3.3V	—
25	REG. 4.2V	4.2V	—	26	SYNC Output	—	
26	—	—		27	D.V SYNC Input (Video Output is mute when D.C3.5V is over)	—	
27	—	—		35	H/SW(25Hz) Input	REC/PB	
28	Video Output	REC/PB		36	FM Modulation Input	REC/PB 2.2V	—

* CCD
IC303 (MSM7403MS)

PB(REC)

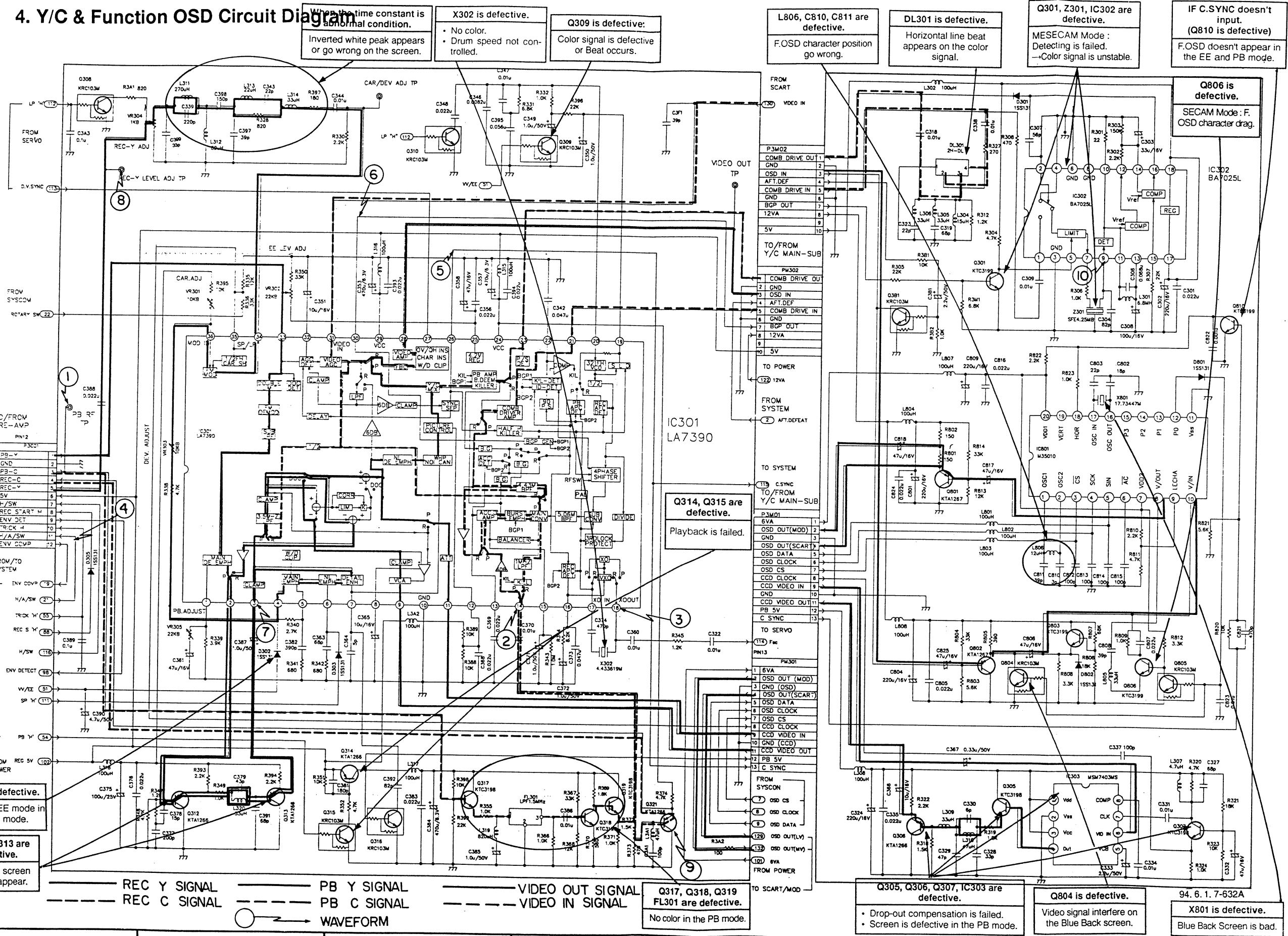
Pin No.	Voltage
1	0(0)
2	0(0)
3	4.8V(4.98V)
4	
5	2V(2.1V)
6	
7	
8	8.2V(8.47V)

* MESECAM
IC302 (BA7025L)

PB(REC)

Pin No.	Voltage
1	3.5V(3.6V)
2	
3	0(0)
4	3.5V(0)
5	
6	0(0)
7	
8	0(0)
9	3V(3V)
10	0(0)
11	3.7V(3.46V)
12	0(4.2V)
13	3.7V(3.49V)
14	0(4.15V)
15	0(0)
16	0(4.3V)
17	4.9(4.99V)
18	4.9(4.99V)

4. Y/C & Function OSD Circuit Diagram



A

8

3

3-29

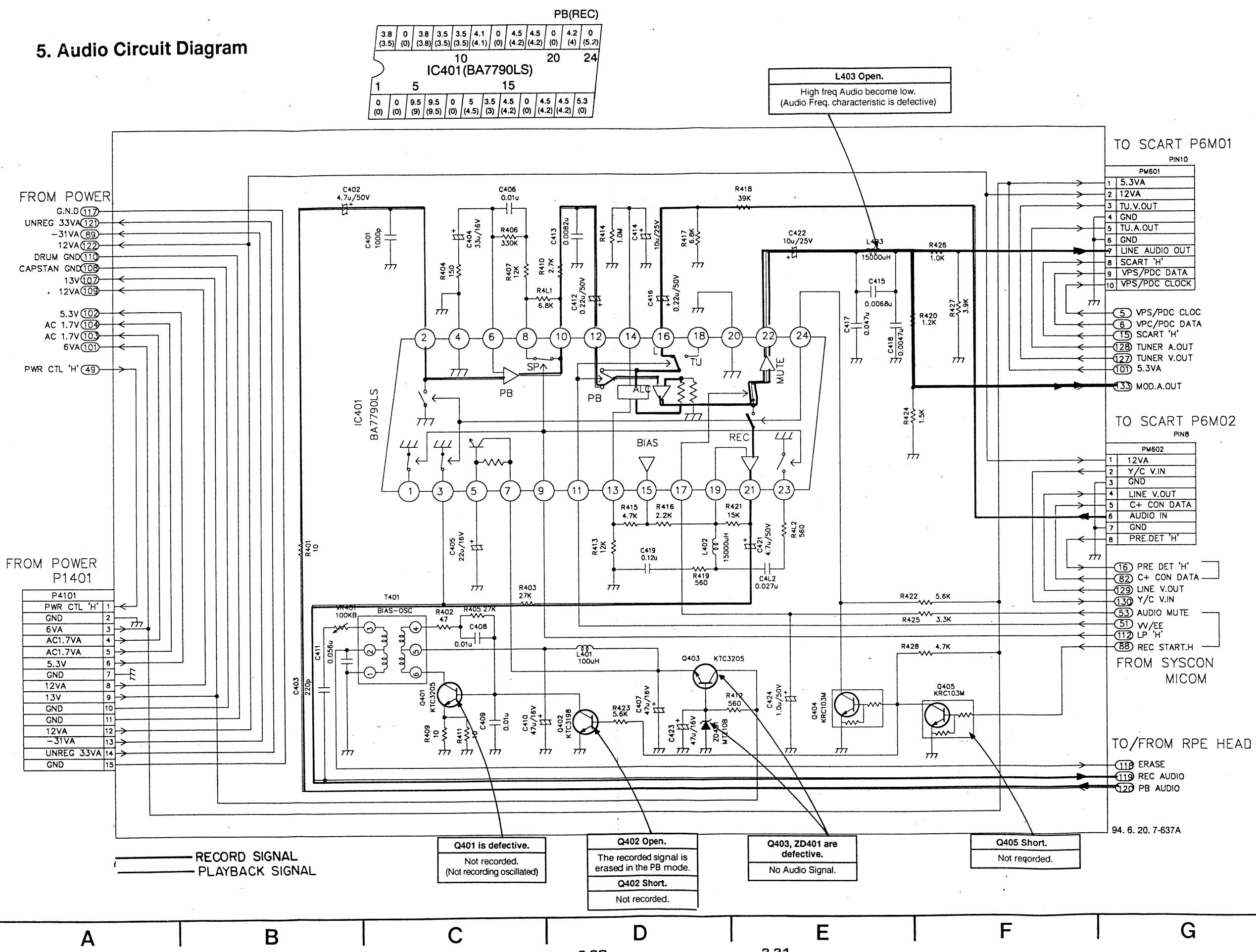
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1

1

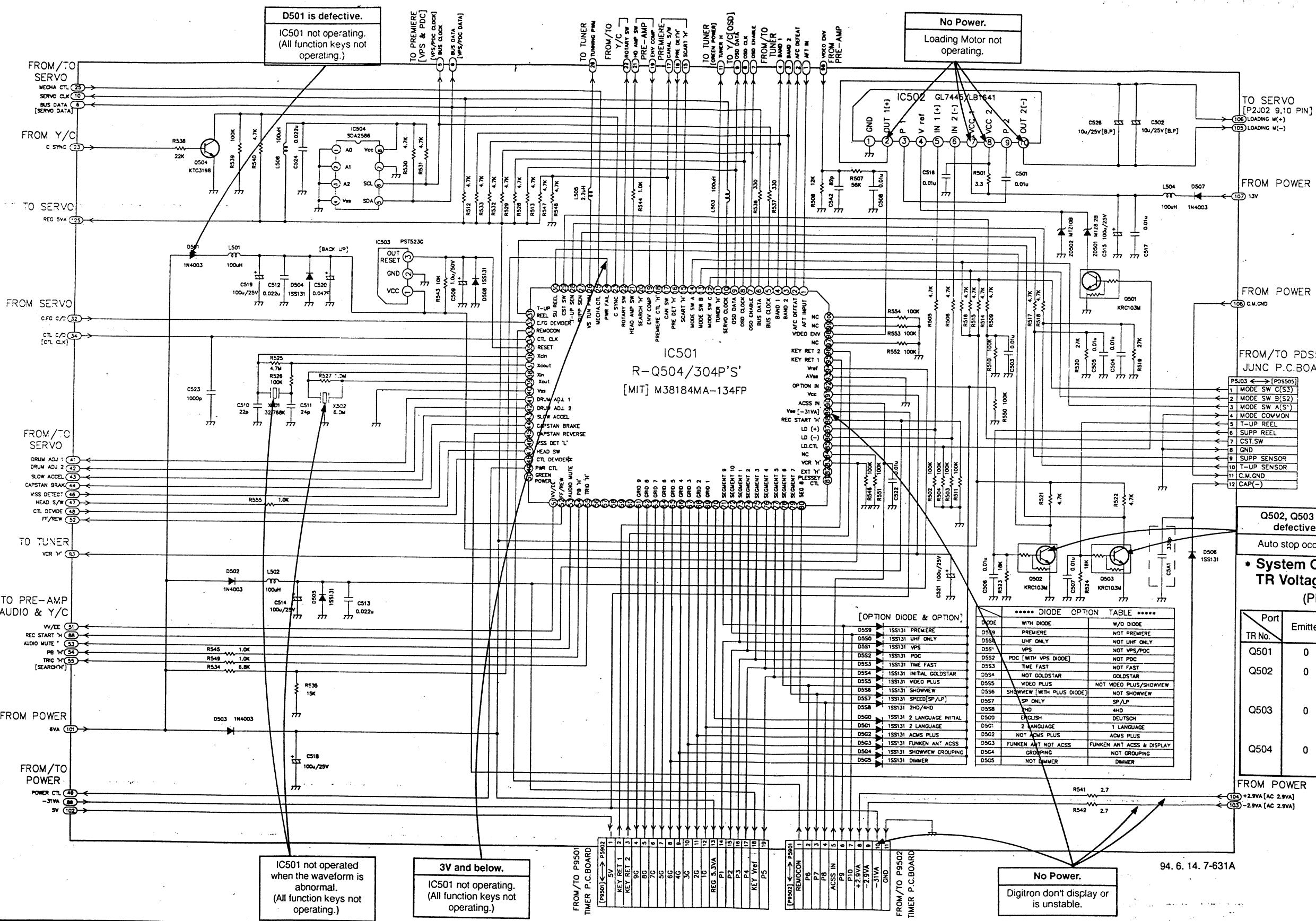
5. Audio Circuit Diagram

5



6. System Control Circuit Diagram

5



A

B

C

D

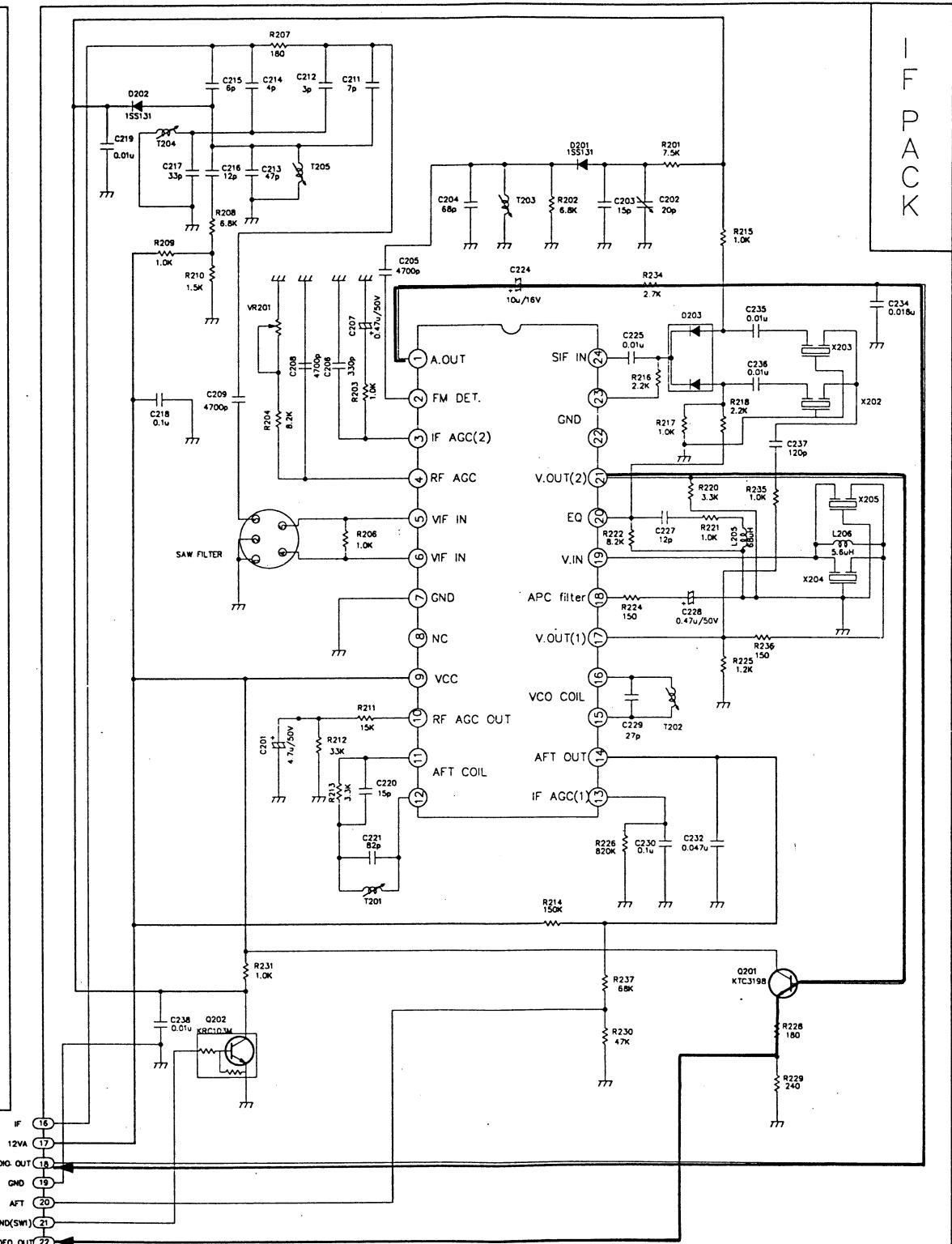
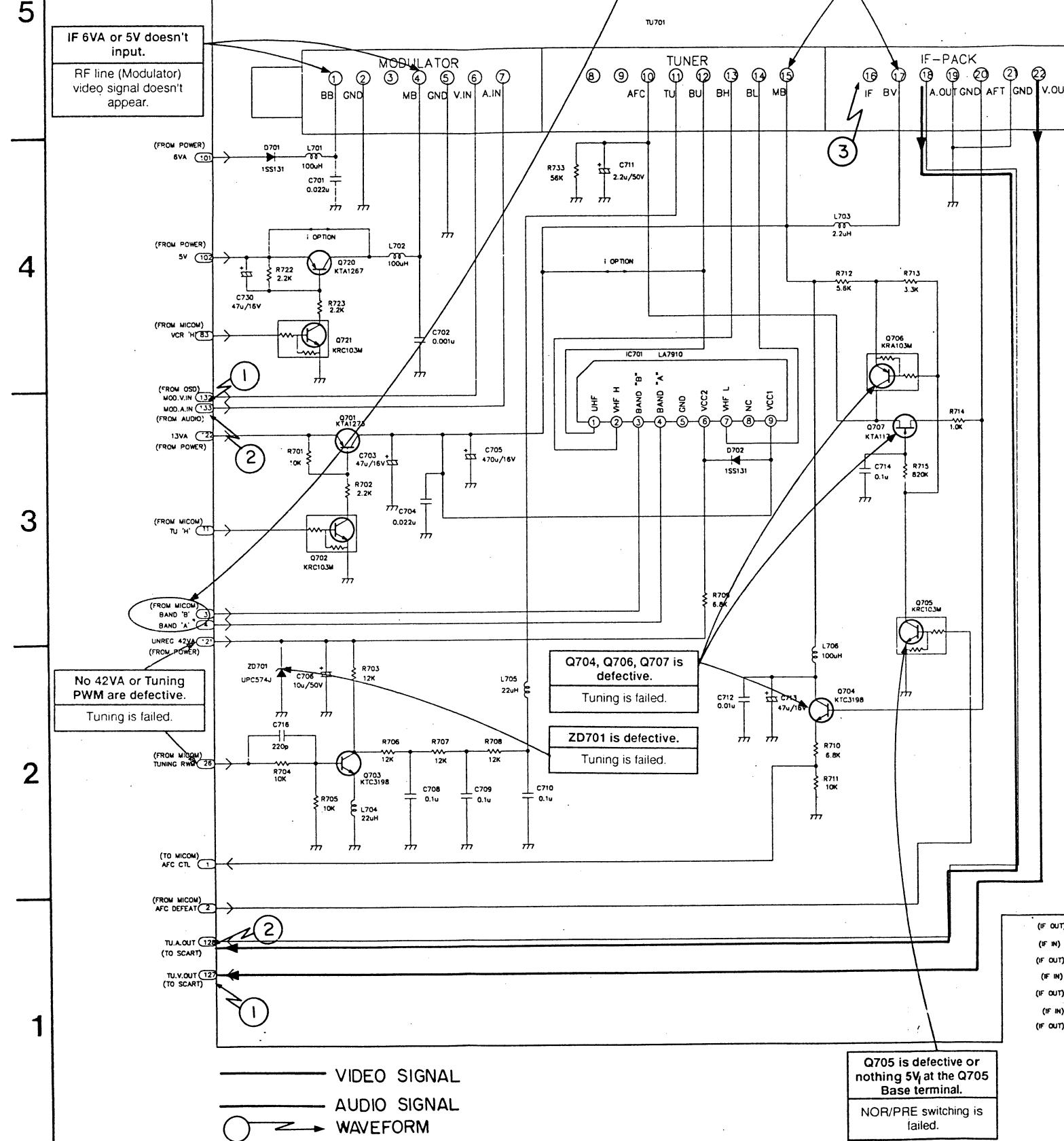
E

F

G

H

7. Tuner/IF Circuit Diagram



94.6.1.7-635A

**Q705 is defective or
nothing 5V_L at the Q705
Base terminal.**

* Tuner/IF TR Voltage Sheet

Port TR No.	Emitter	Collector	Base
Q701	12.39	12.34	11.65
Q702	0	0	5.12
Q703	0	8.99	0
Q704	3.62	12.29	4.19
Q705	0	12.26	0
Q706	12.29	4.12	12.26
Q707	4.12	4.68	4.12
Q720	5.23	5.11	4.43
Q721	0	0	5.12

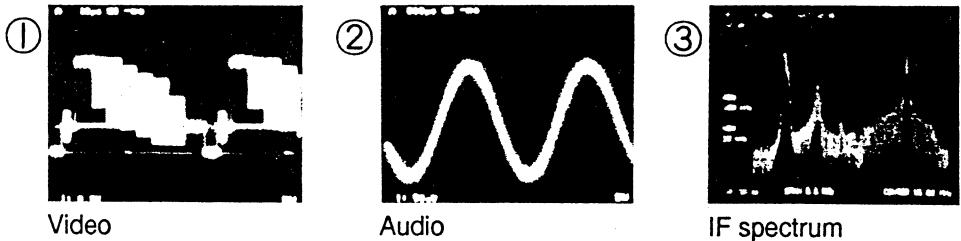
* Tuner/IF IC Voltage Sheet
Band Select IC701 (LA7910)

Pin	Pin Function					
1	UHF 12V					
2	VHF High 12V					
3, 4	Band	Pin	3	4	1	2
	VHF Low		L	H	L	L
	VHF High		H	L	L	H
	UHF		L	L	H	L
	(③, ④) High=3V ①, ②, ⑦ High=12V					
5	GND					
6	14VA					
7	VHF Low 12V					
8	N.C					
9	12VA					

* Tuner

BB	GND	NC	MOD.V.IN	MOD.A.IN	AFC	TU	BU	BH	BL	MB	IF	BV	A.OUT	GND	AFT	GND	V.OUT
Power DC 6VA	0	0	1Vp-p 1.3Vp-p	-5dBm 1.3Vp-p	DC 4V DC 0-33V	DC 12V	UHF VHF _H	VHF _L 12V	DC 12VA		DC 12VA	2.3Vp-p 0	DC 4V	0	0	1Vp-p	

* Tuner/IF Waveform



* Premiere Switching IC
IC601 (LA7156)

0dBm=2.3Vp-p

Pin	Pin Function	Voltage
1	Premiere Audio Input	0dBm
2	Premiere Detect "H"	DC 5V
3	Line Audio Input	0dBm
4	NC	
5	Tuner Audio Input	0dBm
6		DC 9VA
7	NC	
8	Line Video Input	1Vp-p
9		DC 9VA
10	Tuner Video Input	1Vp-p
11	NC	
12	Premiere Video Input	1Vp-p
13	OSD Video Input	1Vp-p
14	Line Video Output	2Vp-p (75Ω mismatch)
15	Y/C Video Input	1Vp-p
16	VPS/PDC Video Output	1Vp-p
17	Premiere Video Output	2Vp-p (75Ω mismatch)
18	GND	
19	Premiere Control DATA	
20	GND	
21	Premiere Audio Output	0dBm
22	Audio Output	-2dBm
23	Line Audio Output	0dBm
24	Audio Input	-2dBm

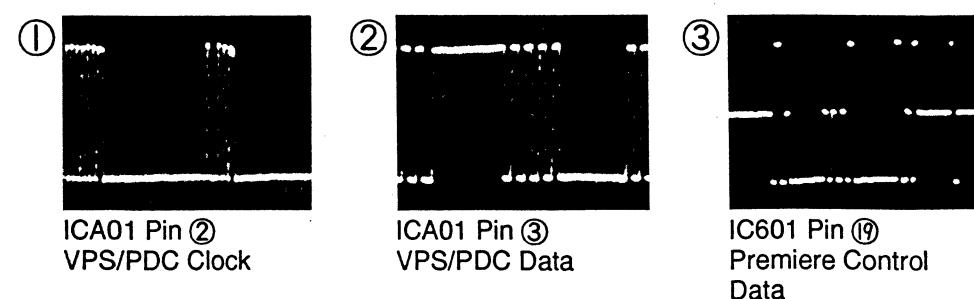
* VPS/PDC IC
ICA01 (SDA5649)

Pin	Pin Function	Voltage
1	GND	
2	Serial Clock	
3	Serial DATA	
4	GND	
5	NC	
6	NC	
7	NC	
8	GND	
9,10, 11		DC 2.5V GND
12	Current Reference	DC 1.5V
13	VPS/PDC Video Input	1Vp-p
14		DC 5VA

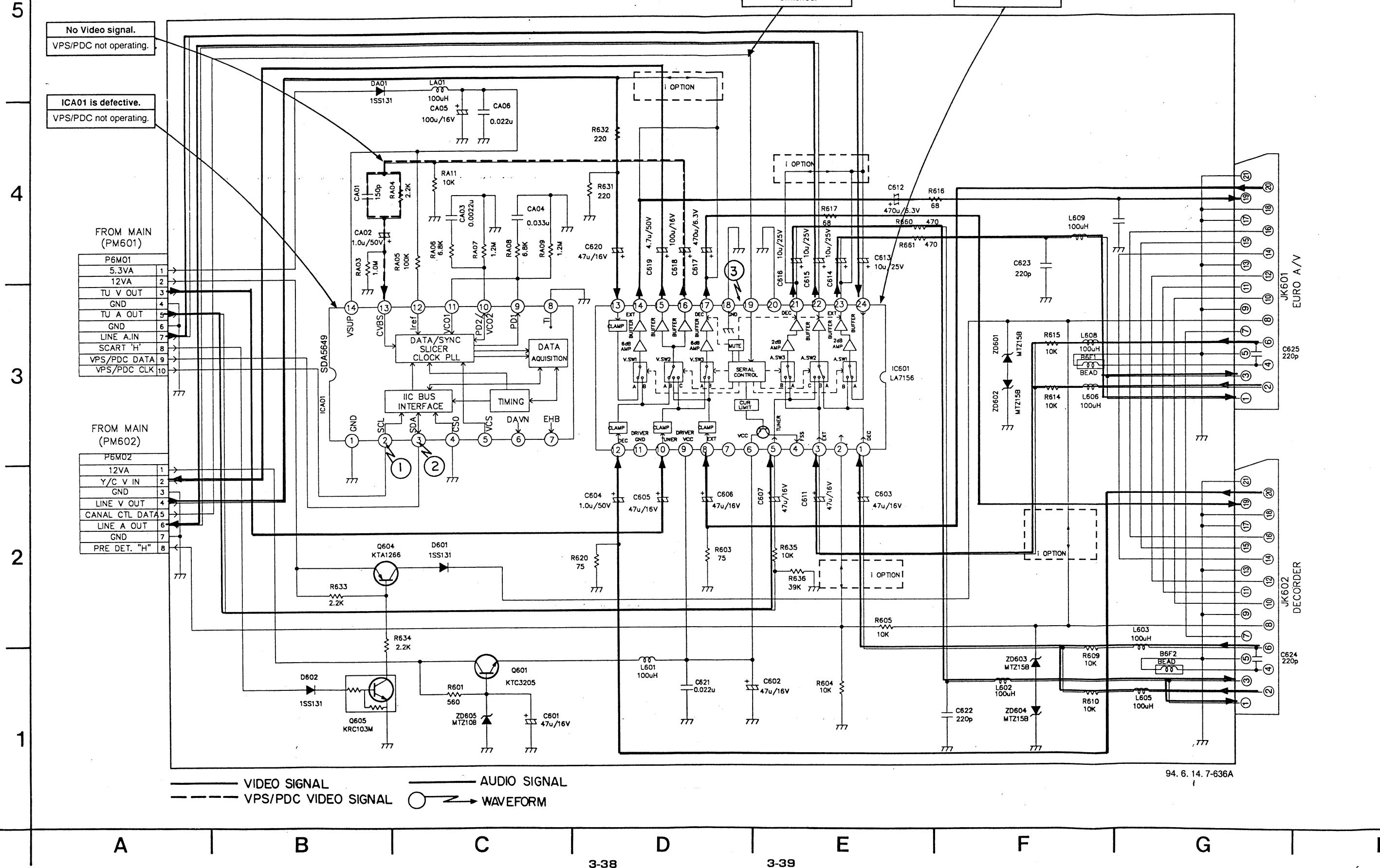
* VPS/PDC TR Voltage Sheet

Port TR No.	Emitter	Collector	Base
Q601	9.17	12	10
Q604	12.45	12.44	11.68
Q605	0	0	4.6

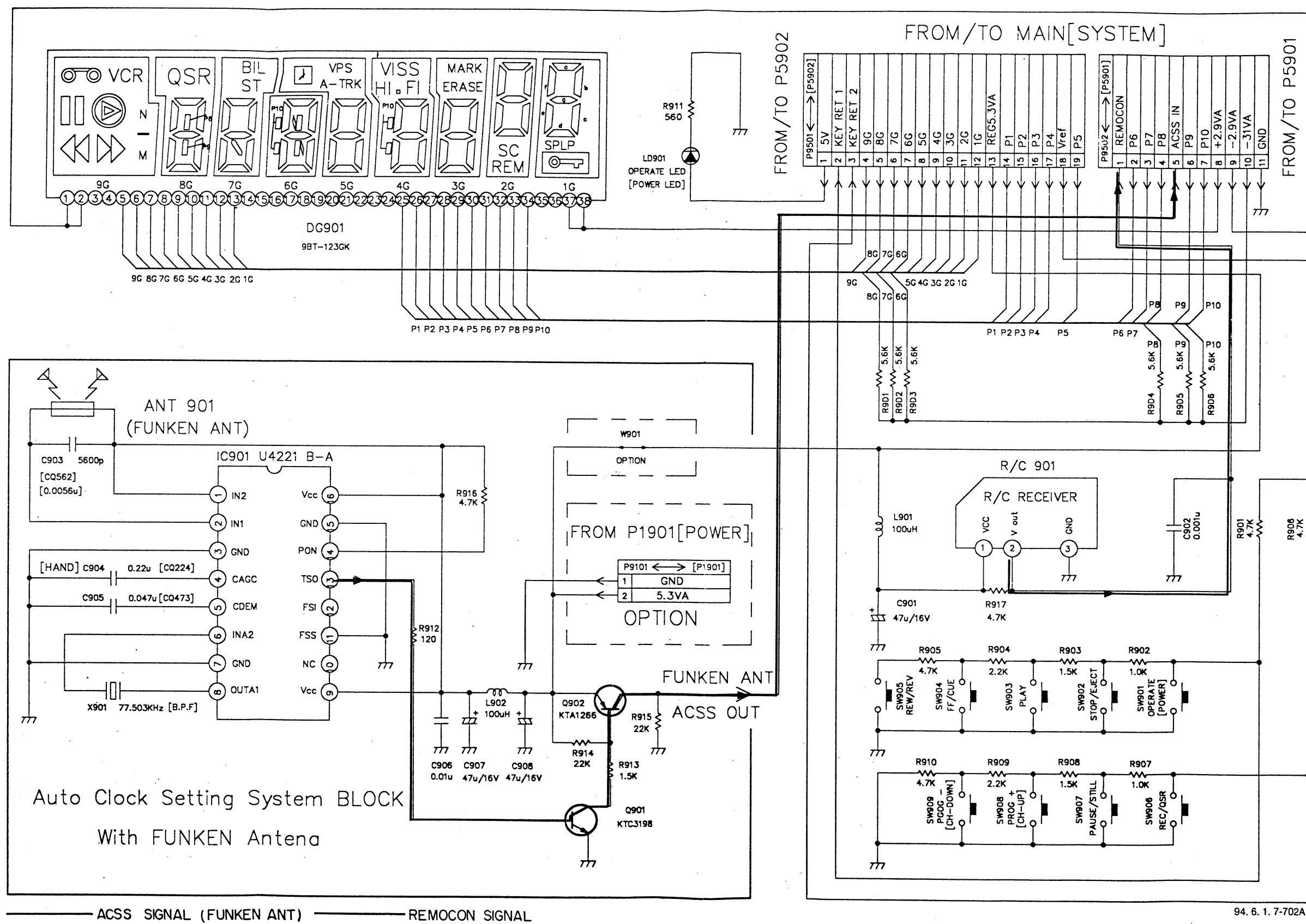
* Waveform



8. Premiere, VPS & PDC Circuit Diagram



9. Timer Circuit Diagram



A

B

C

D

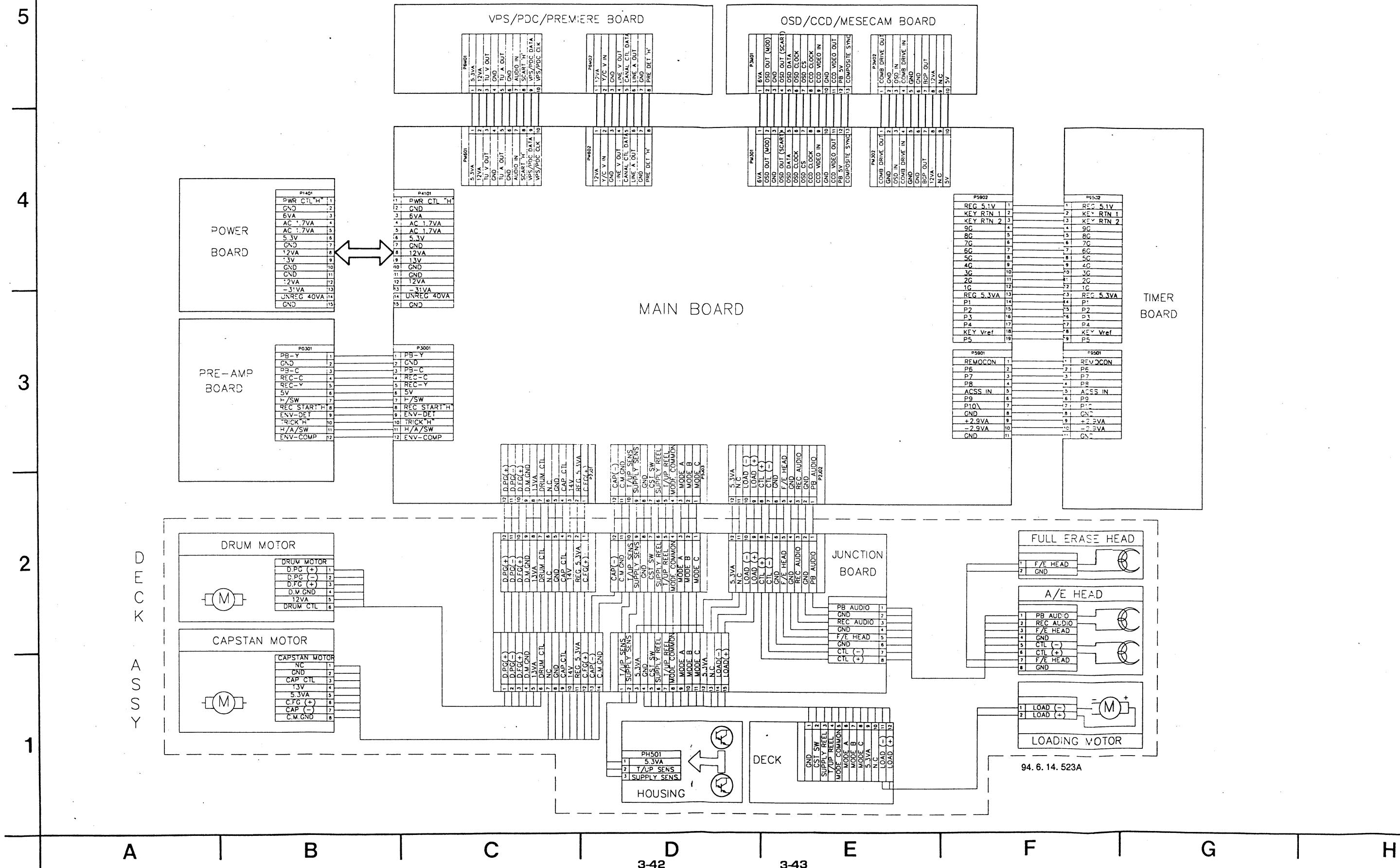
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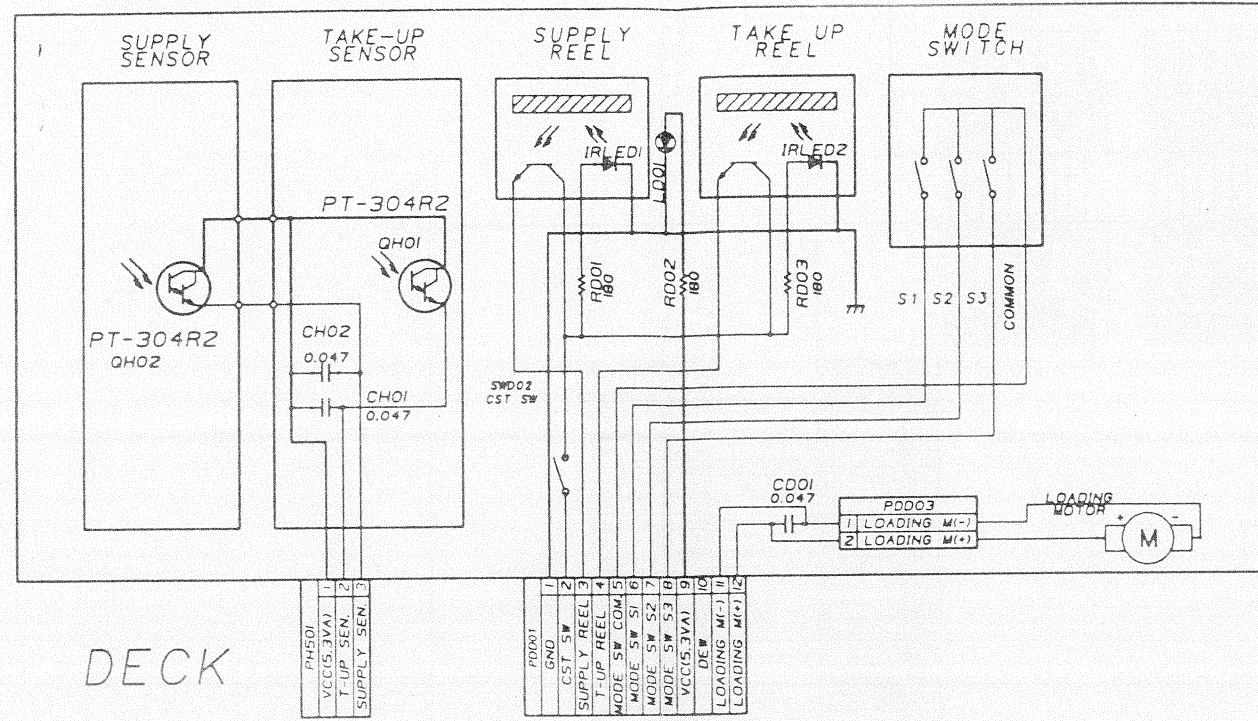
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10. Connection Diagram

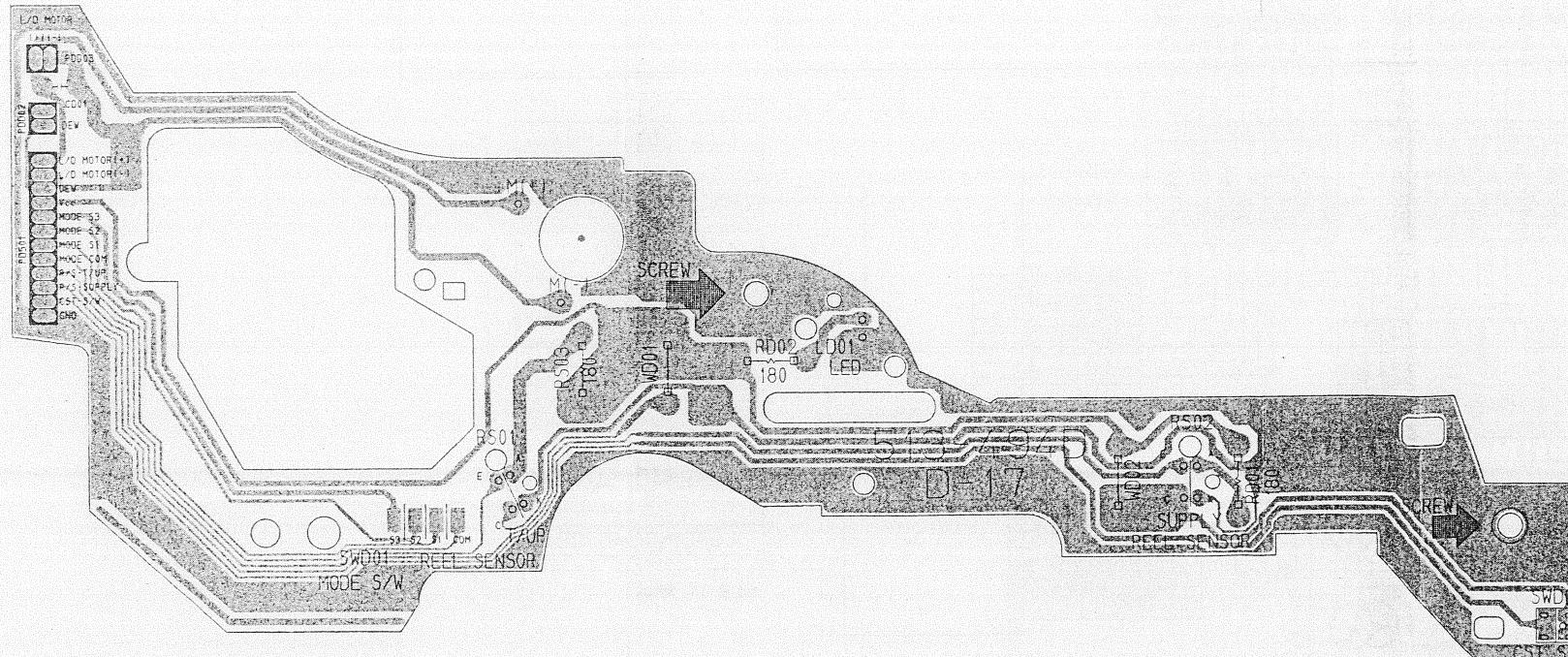


DECK JUNCTION

1. Deck Junction Circuit Diagram



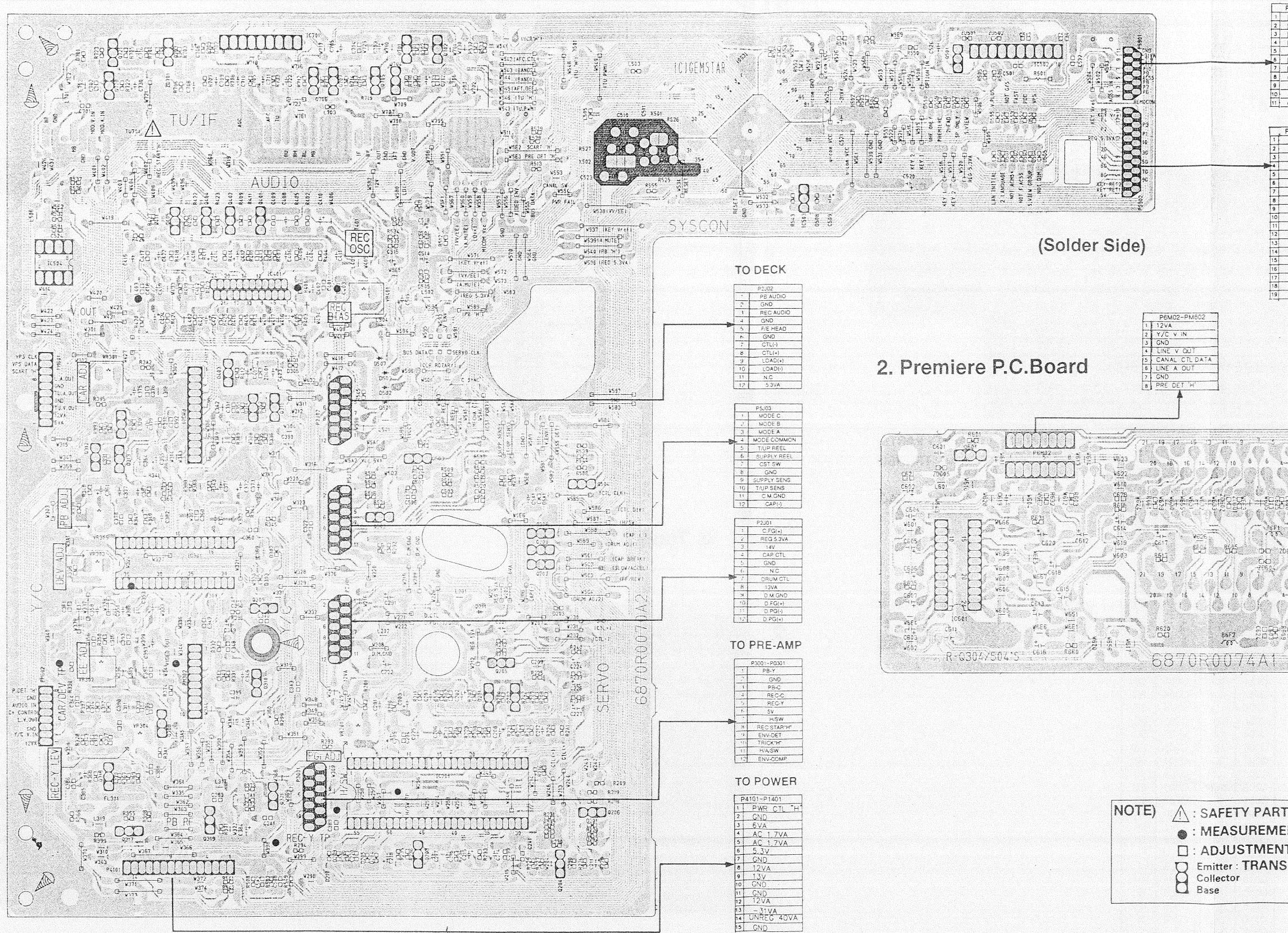
2. Deck Junction P.C.Board



(Solder Side

PRINTED CIRCUIT BOARD DIAGRAMS

1. Main P.C. Board



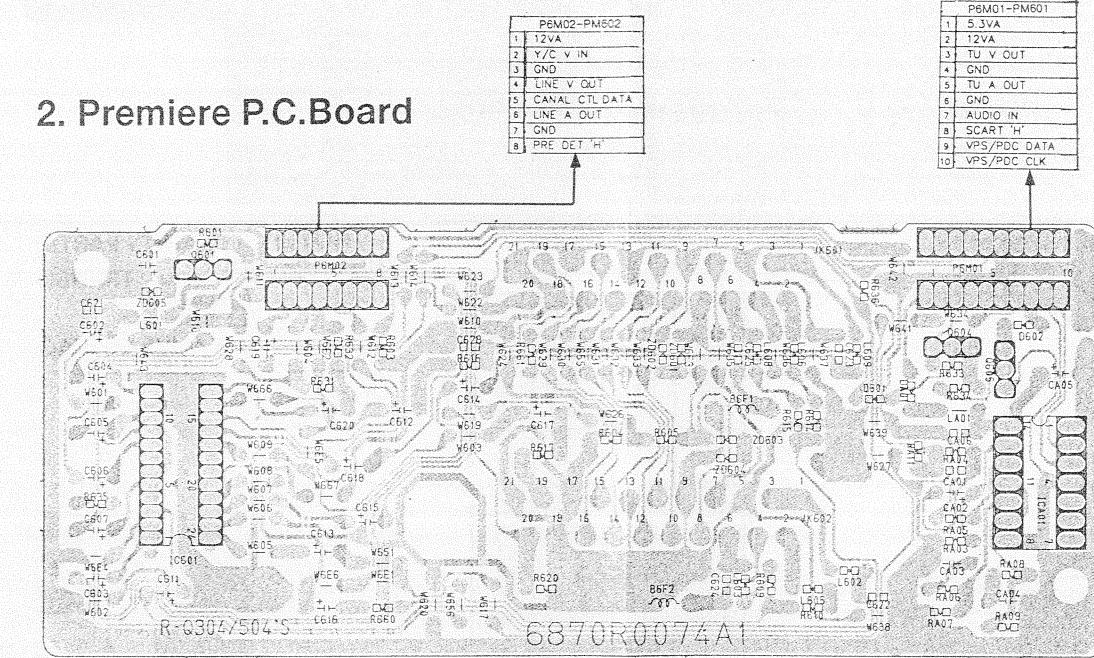
TO TIMER

P5901-P5902
1 REMOCCN
2 P6
3 P7
4 P8
5 ACSS IN
6 P9
7 P10
8 GND
9 +2.9VA
10 -2.9VA
11 GND

P5902-P5901
1 REC 5.1V
2 KEY RTN 1
3 KEY RTN 2
4 9G
5 8G
6 7G
7 6G
8 5G
9 4G
10 3G
11 2G
12 1G
13 REC 5.3VA
14 P1
15 P2
16 P3
17 P4
18 KEY Vref
19 P5

P5M01-PM601
1 5.3VA
2 12VA
3 TU V OUT
4 GND
5 TU A OUT
6 GND
7 AUDIO IN
8 SCART H'
9 VPS/PDC DATA
10 VPS/PDC CLK

2. Premiere P.C. Board



(Solder Side)

NOTE)

- ⚠ : SAFETY PARTS
- : MEASUREMENT POINT
- : ADJUSTMENT POINT
- : Emitter : TRANSISTOR
Collector : Base

ADJ
AFC
AGC
AUD
CAR
COL
DEV
EE
ENV
FRE
LEV
LUM
OSC
PB
PG
REC
SIF
VOL

A

B

C

D

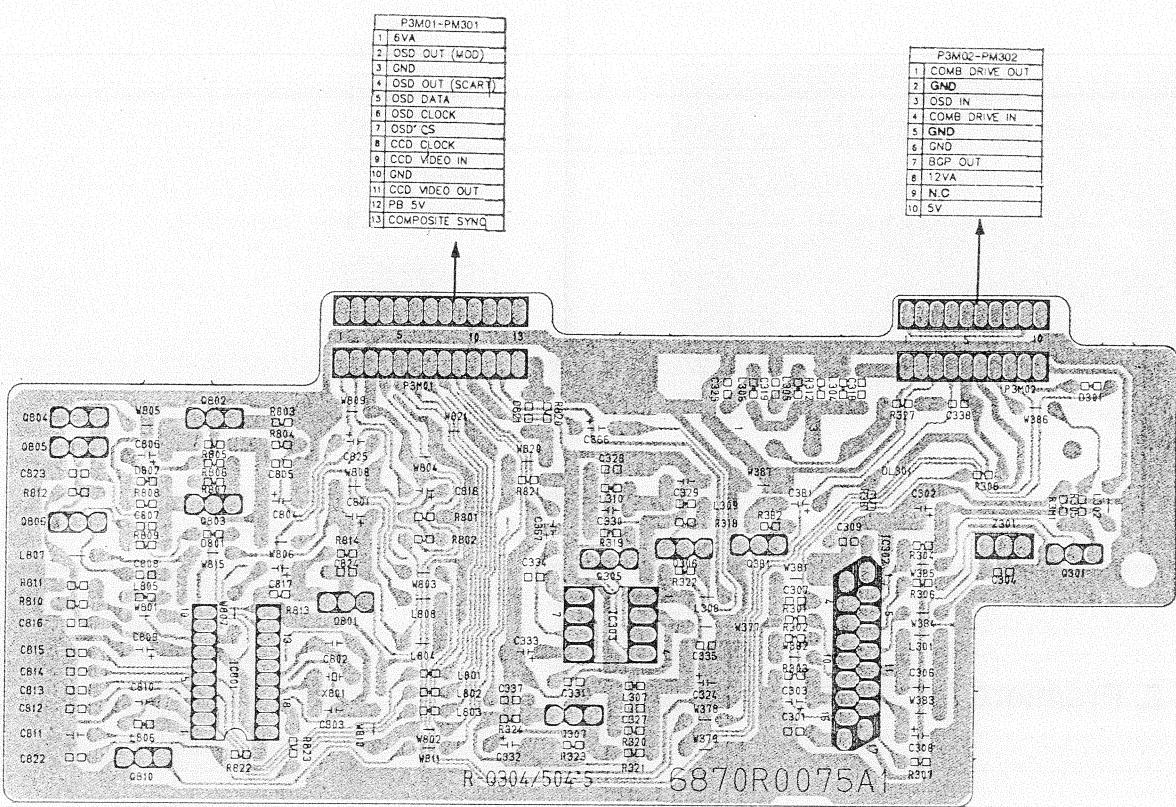
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H

3. Y/C P.C. Board



(Solder Side)

ABBREVIATIONS	
ADJ : ADJUSTMENT	
AFC : AUTOMATIC FREQUENCY	
CONTROL	
AGC : AUTOMATIC GAIN	
CONTROL	
AUD : AUDIO	
CAR : CARRIER	
COL : COLOR	
DEV : DEVIATION	
EE : Electric to Electric	
ENV : ENVELOP	
FRE : FREQUENCY	
LEV : LEVEL	
LUM : LUMINANCE	
OSC : OSCILLATION	
PB : PLAYBACK	
PG : PULSE GENERATOR	
REC : RECORDING	
SIF : SOUND INTERMEDIATE	
FREQUENCY	
VOL : VOLTAGE	

H

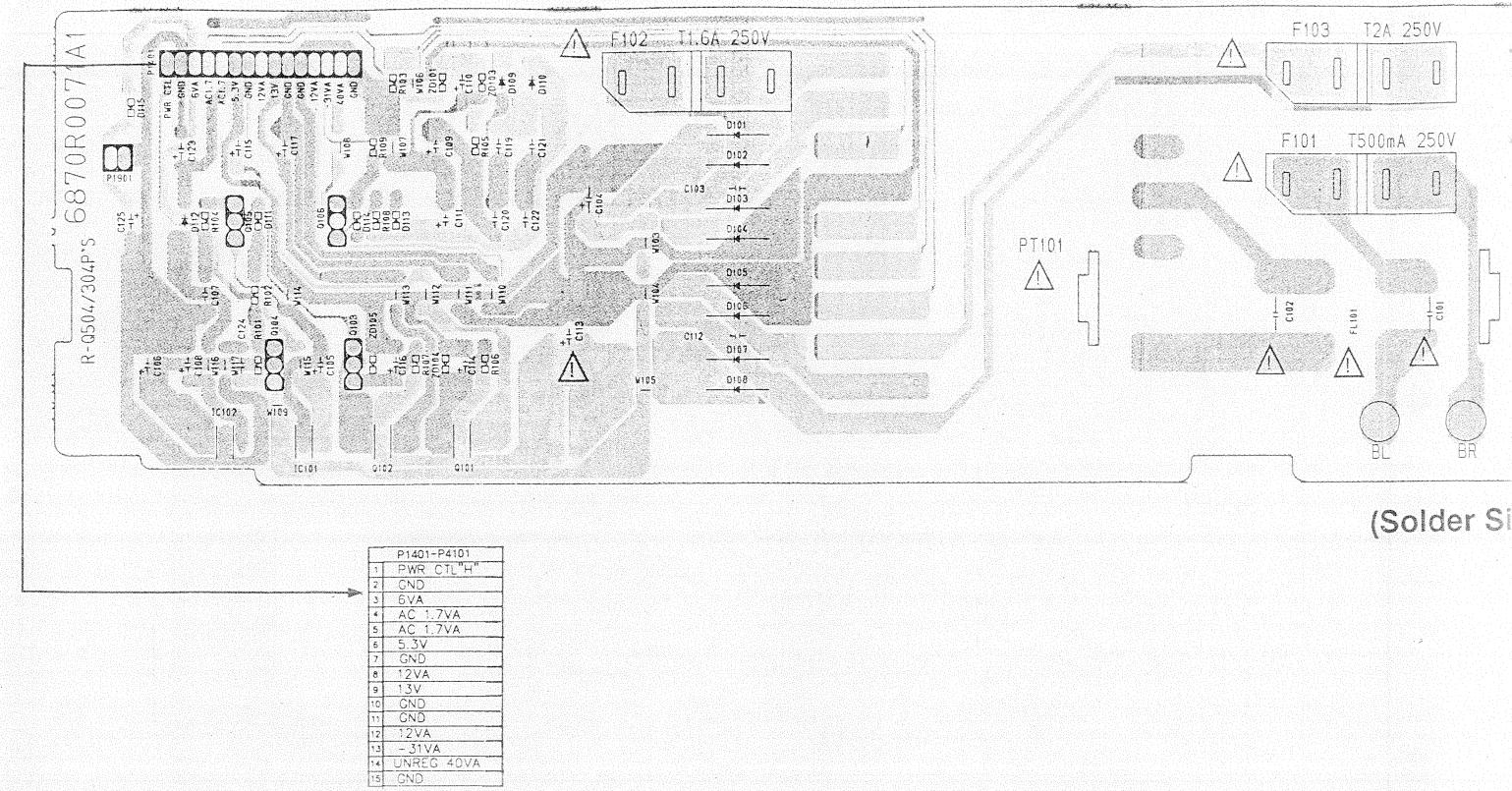
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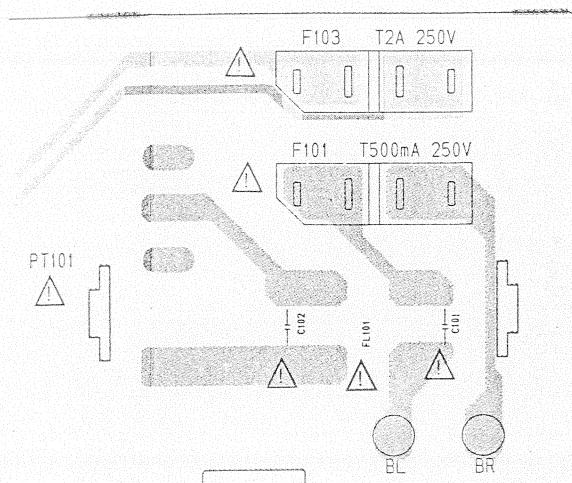
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3-48

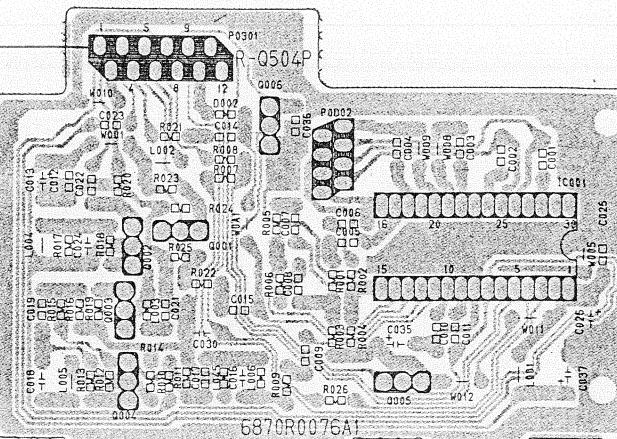
4. Power P.C. Board



5. Pre-Amp P.C.Board



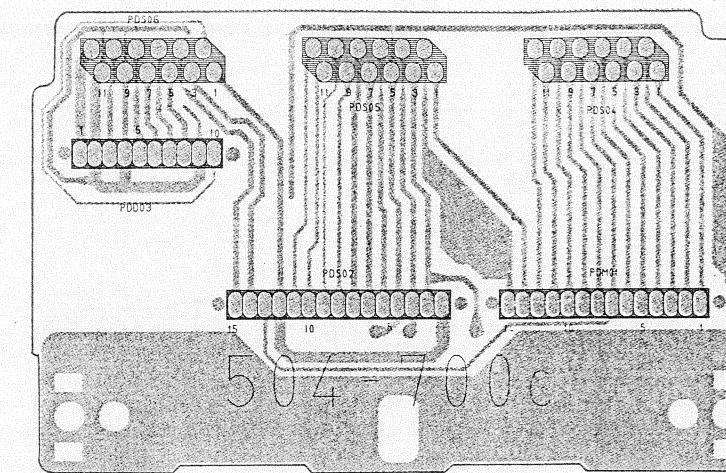
(Solder Side)



(Solder Side)

P0301-P3001	
1	PB-Y
2	GND
3	PB-C
4	REC-C
5	REC-Y
6	5V
7	H/SW
8	REC START "H"
9	ENV-DET
10	TRICK "H"
11	H/A/SW
12	ENV-COMP

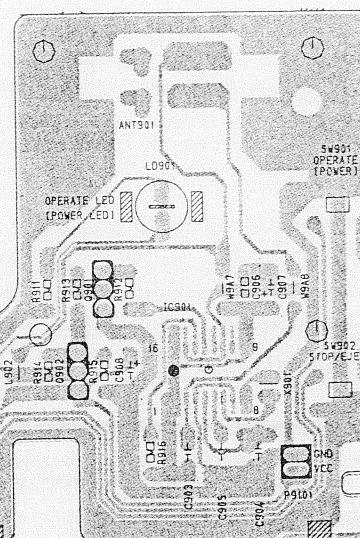
7. Junction P.C.Board



(Solder Side)

LOCA NO.	Position
IC001	5G
IC101	4A
IC102	4A
Q001	4F
Q002	4F
Q003	4F
Q004	4F
Q005	4G
Q006	5F
Q101	4B
Q102	4B
Q103	4B
Q104	4A
Q105	4A
Q106	4B
Q901	1G
Q902	1F

NOTE) : SAFETY PARTS
 : TRANSISTOR
 : Collector
 : Emitter
 : ALIVE VOLTAGE



(Solder Side)

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MECHANISM TROUBLESHOOTING GUIDE

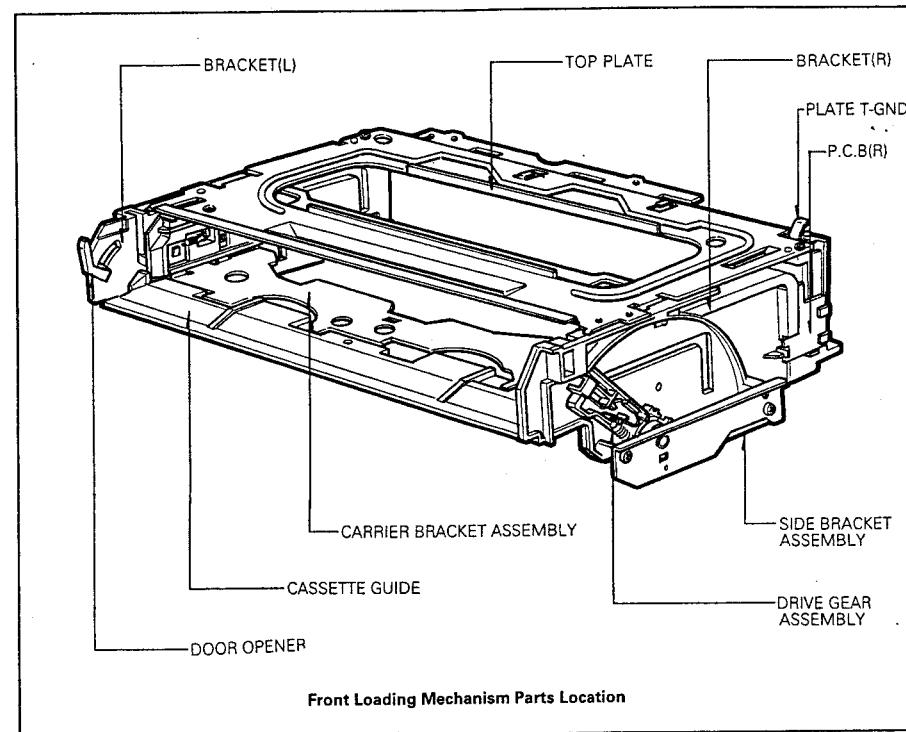
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EXPLODED VIEW

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FRONT LOADING MECHANISM DISASSEMBLY

- Front Loading Mechanism Parts Location



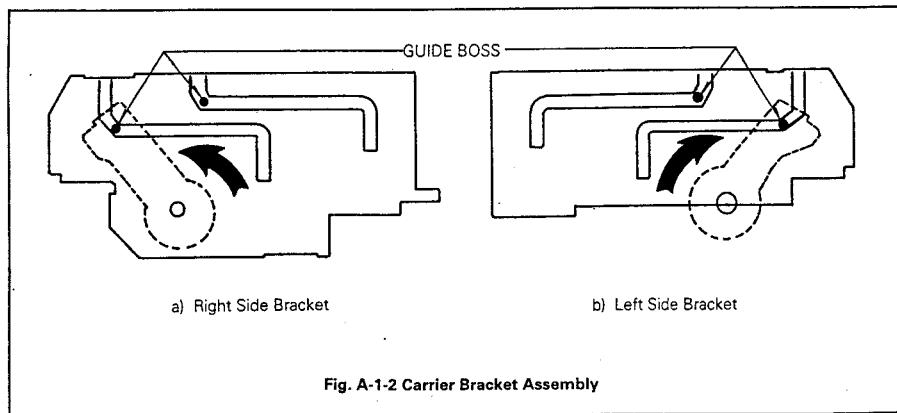
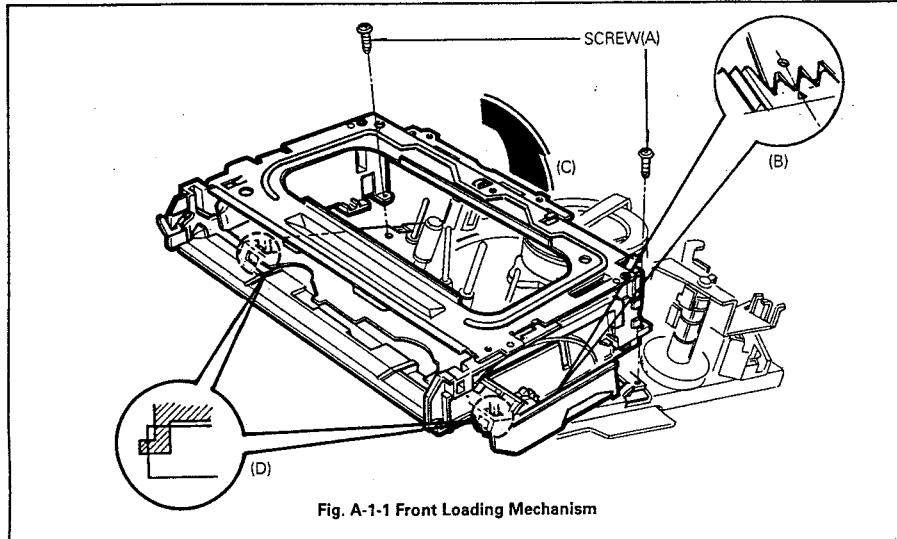
1. Component list below will be described as if the top and bottom covers and the front panel have already been removed.
2. P.C.B Assembly
3. Top Plate
4. Carrier Bracket Assembly
5. Cassette Guide
6. Side Bracket Assembly
7. Bracket(L), (R)
8. Door Opener
9. Drive Gear Assembly

1. Front Loading Mechanism Assembly (Fig. A-1-1)

- 1) Remove the Top and Bottom Covers and the Front panel.
- 2) Unplug the connector.
- 3) Remove two screws(A).
- 4) Lift up the Front Loading Mechanism in the direction of arrow(C).

* NOTE

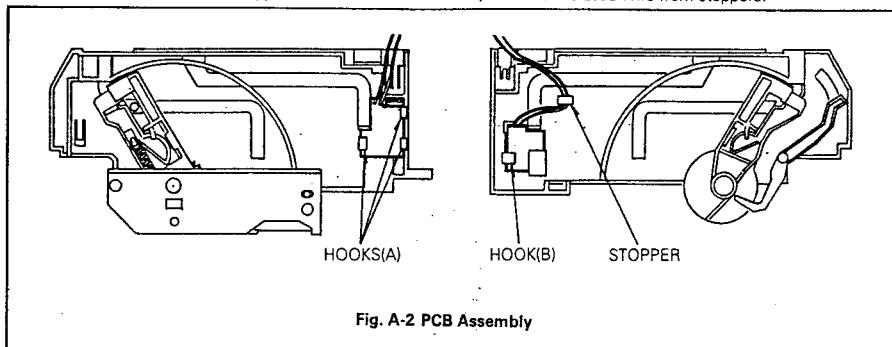
- 1) When disassembling and reassembling
- ① Give special attention to removal, because two tabs(D) are engaged.



2. PCB(Printed Circuit Board) Assembly

2-1. P.C.B Assembly(R)(Fig. A-2)

- 1) Remove the PCB Assembly(R) by pushing three Hooks (A) outward.
- 2) Release the Lead wire from stoppers.

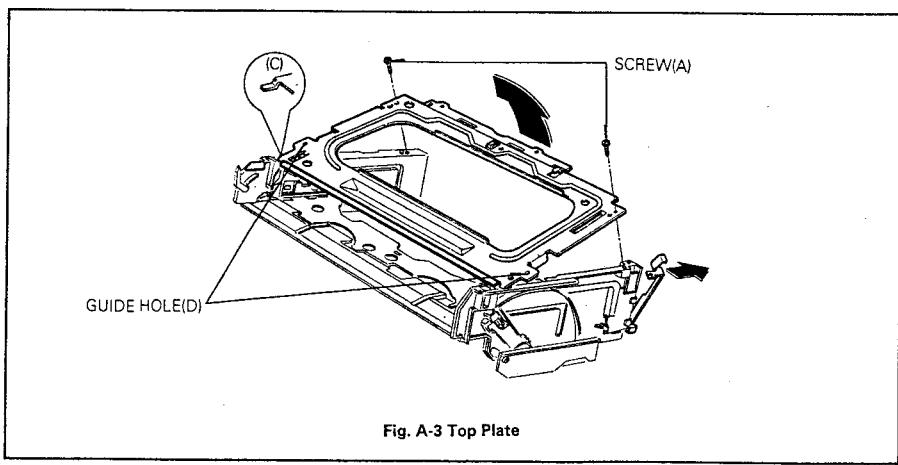


3. Top Plate(Fig. A-3)

- 1) Remove two screws(A).
- 2) Push the upper part of Top plate Ground and then lift up the Top Plate.

* NOTE

- 1) When reassembling, be certain that the tabs(C) of Top Plate is in both Bracket(L),(R).
- ① Then align the guide holes(D) of Top Plate with Bosses of side Bracket(L),(R).



4. Carrier Bracket Assembly

4-1. Carrier Bracket Assembly(Fig. A-4-1)

- 1) Remove the Carrier Bracket Assembly by moving it in the direction of arrow(C).

* NOTE

- 1) When reassembling, be sure that parts(A) of Carrier Bracket Assembly are seated in parts(B) of Bracket(L),(R).

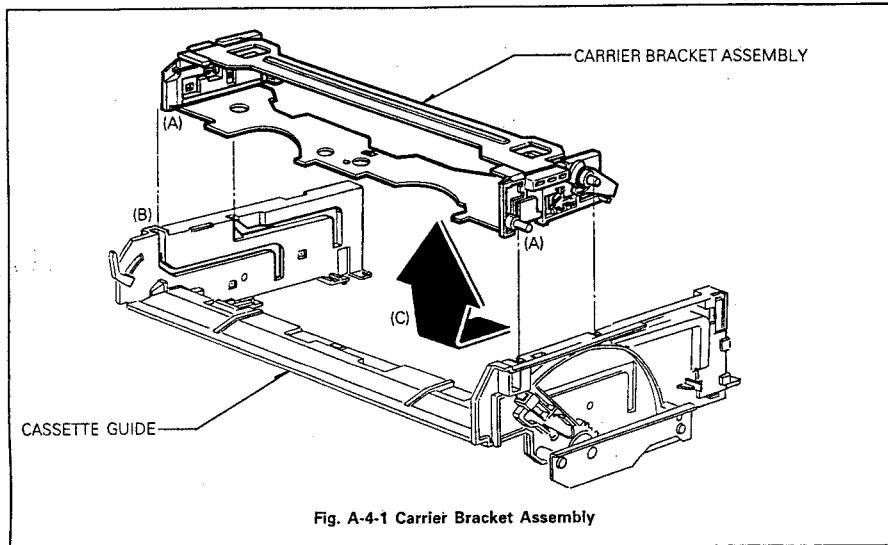


Fig. A-4-1 Carrier Bracket Assembly

4-2. Cassette Opener(Fig. A-4-2)

- 1) Release the spring O.C from the Hook(A) and then release it from Hook(C) of cassette opener.
- 2) Remove the cassette opener by releasing the Hook(B) from the Holder(R).

4-3. Lid Opener(Fig. A-4-2)

- 1) Remove the lid opener by pushing it outward.

* NOTE

- 1) When reassembling, seat the upper part of the lid opener in the grooved of Holder(R) and push it inward.

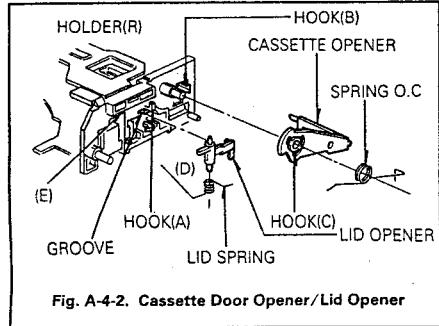


Fig. A-4-2. Cassette Door Opener/Lid Opener

4-4. Detect Lever and Detect Spring

- 1) Remove the spring detect.
- 2) Lower the side(A) of Detect Lever and then remove the Detect Lever by pushing it outward.

* NOTE

- 1) When reassembling, make sure that the part(C) of Detect Lever set in the part(B) of Holder(R).

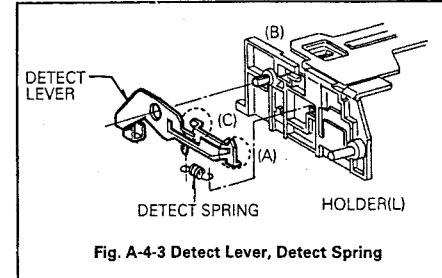


Fig. A-4-3 Detect Lever, Detect Spring

4-5. Bracket Support (Fig. A-4-4)

- 1) Take the Support Bracket out by releasing hooks(A),(B).

* NOTE

- 1) When disassembling and reassembling, be careful because heavy force can damage the hooks.

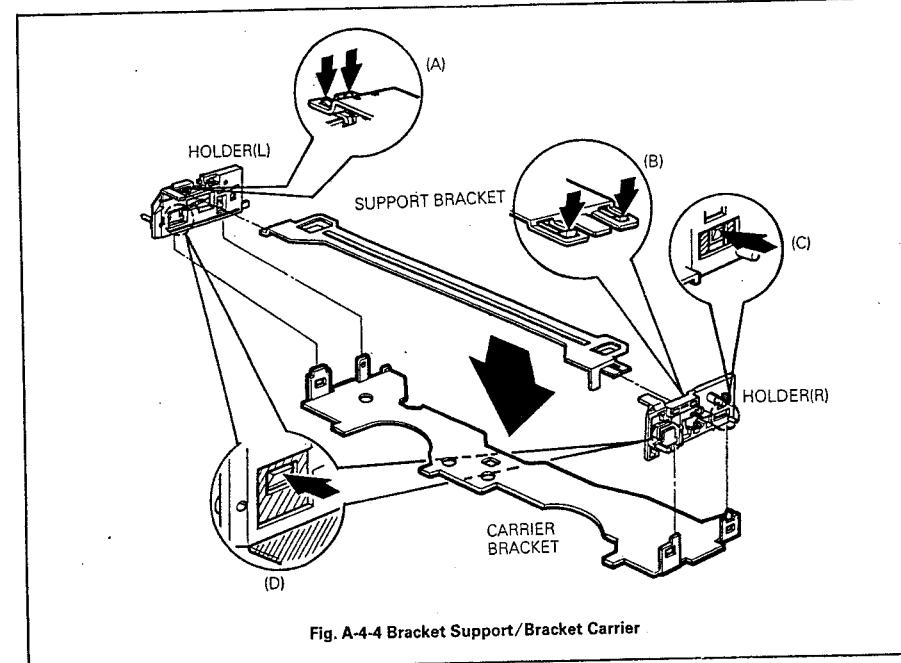


Fig. A-4-4 Bracket Support/Bracket Carrier

4-6. Carrier Bracket Assembly(Fig. A-4-4)

- 1) Remove the Carrier Bracket by releasing hooks(C),(D).

5. Cassette Guide(Fig. A-5)

- 1) Remove the Switch Spring with the Front Loading Mechanism Assembly turned over.
- 2) Push two hooks(B) outward.
- 3) Remove the Cassette Guide by pushing two hooks(A) outward(if one is removed, the other will be easy to remove)

* NOTE

- 1) When reassembling
 - ① Seat projections(E) of Cassette Guide in holes of Bracket Assembly(L),(R) and then engage the Hook(A).
 - ② After finishing previous step, fix the Cassette Guide to the Bracket Assembly(L),(R) by pushing two hooks(B) inward.

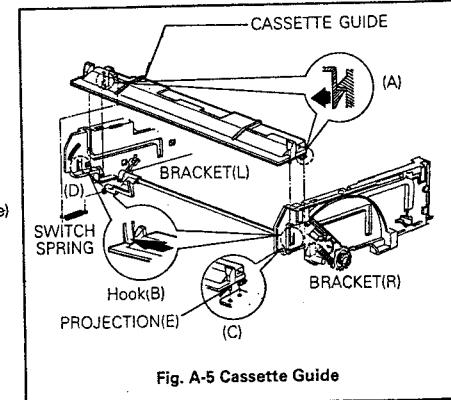


Fig. A-5 Cassette Guide

6. Side Bracket Assembly(Fig. A-6-1)

- 1) Remove two screws(A) and then remove the Side Bracket Assembly and the Rack Gear N.D.

* NOTE

- 1) When reassembling
① Turn the Drive Gear Assembly in the direction of arrow (C).
- ② Reassemble the Rack Gear N.D. to the Side Bracket Assembly, as shown in Fig. A-6-2, and then reassemble

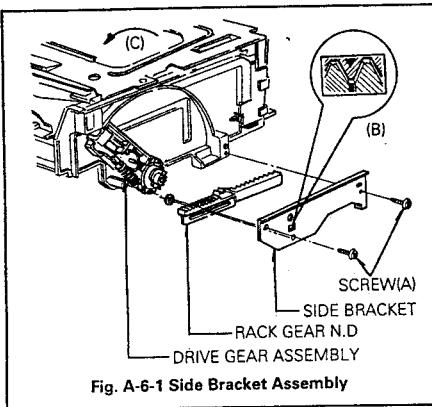


Fig. A-6-1 Side Bracket Assembly

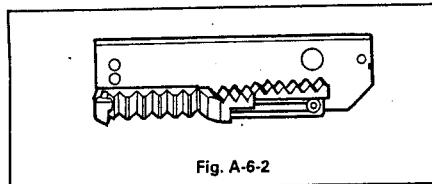


Fig. A-6-2

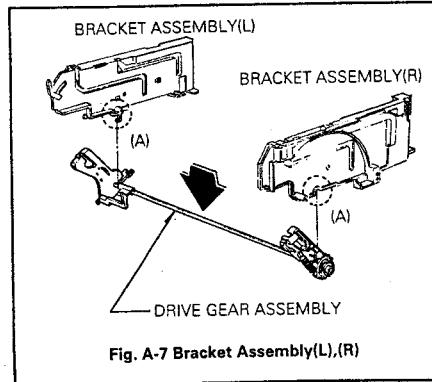


Fig. A-7 Bracket Assembly(L),(R)

it to the Bracket Assembly(L). This time the Assembling Figure should be the same as(B) at the rectangular hole of Bracket Side.

7. Bracket Assembly(L),(R)(Fig. A-7)

- 1) Separate the Bracket Assembly(L),(R) from the Gear Assembly Drive.

* NOTE

- 1) When reassembling, seat the shaft in the part(A) of Bracket Assembly(L),(R).

8. Door Opener(Fig. A-8)

- 1) Remove the Door Opener by pushing Hook(A) outward.

* NOTE

- 1) When reassembling, seat the part(B) of Door Opener in the hole(1) of Bracket(L).

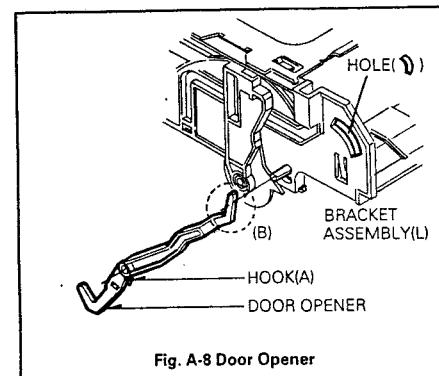


Fig. A-8 Door Opener

9. Drive Gear Assembly

9-1. Drive Gear Assembly(Fig. A-9-1)

- 1) Remove the Drive Gear Assembly from the Bracket Assembly(L),(R).

9-2. Cushion Spring(Fig. A-9-1)

- 1) Remove the cushion spring from the Gear R.

9-3. Cap-D(Fig. A-9-1)

- 1) Remove the Cap-D by lifting it up.

9-4. Spring C.C(Fig. A-9-1)

- 1) Remove the Spring C.C from the Gear R.

9-5. Gear C(Fig. A-9-1)

- 1) Remove the Gear C by lifting up when the projection of Gear C is aligned with the hole of Gear R while rotating the Gear C in the counterclockwise direction.

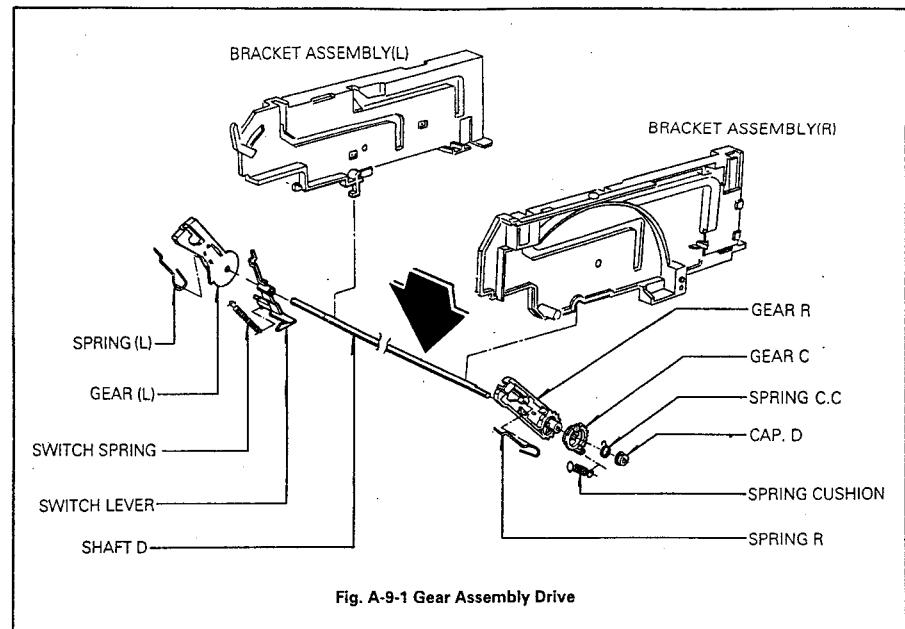


Fig. A-9-1 Gear Assembly Drive

* NOTE

- 1) When reassembling, seat the projections of Gear R in the holes of Gear C when the projection of Gear R is aligned with the hole of Gear C, and then keep the Gear C turned in the clockwise direction.

9-6. Gear R(Fig. A-9-1)

- 1) Lift up the Gear R from the Shaft.

9-7. Spring R(Fig. A-9-2)

- 1) Remove the Spring R by releasing Hooks.

* NOTE

- 1) When reassembling, be certain Spring R in the part(A) of Gear R.

9-8. Gear L.(Fig. A-9-1)

- 1) Remove the Gear L from the shaft.

9-9. Spring L (Fig. A-9-2)

- 1) Remove the Spring L by releasing Hooks from the Gear L.

* NOTE:(Refer to the Spring R Section)

9-10. Switch Lever(Fig. A-9-1)

- 1) Remove the Switch Lever from the shaft.

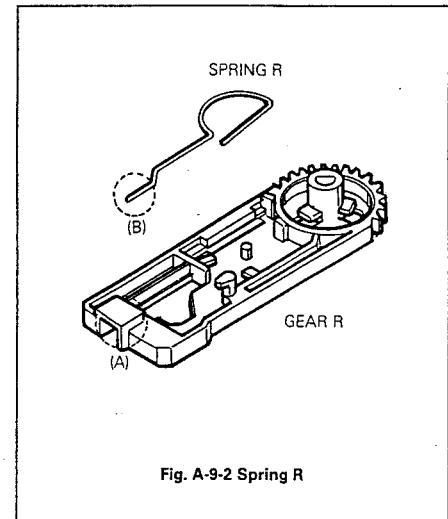
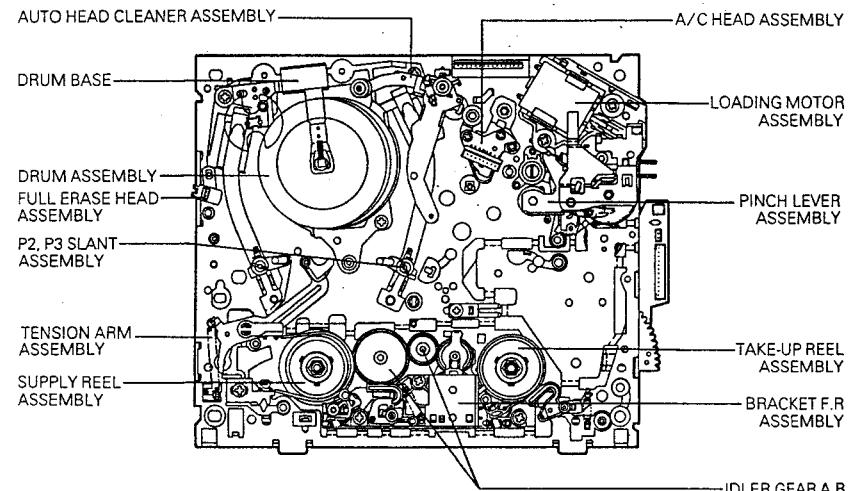


Fig. A-9-2 Spring R

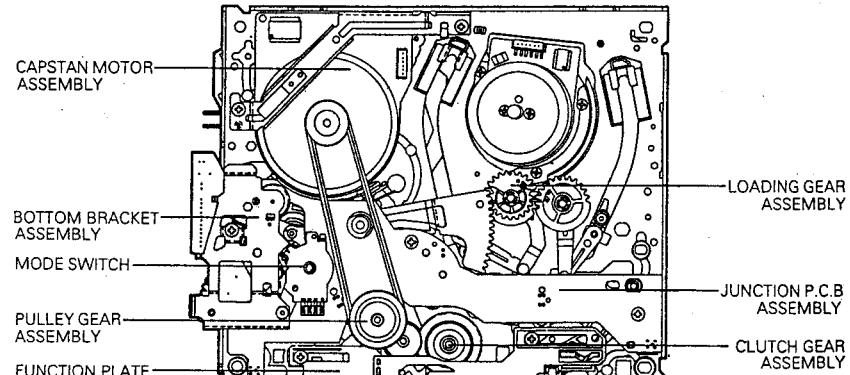
DECK MECHANISM DISASSEMBLY

• Deck Mechanism Parts Location

Top Side



Bottom Side



1. Auto Head Cleaner Assembly(Fig. B-1)

- 1) Remove the Cleaner Spring.
- 2) Remove the Cleaner Arm by pushing Hook(B) inward and then remove Cleaner Lever by pushing it in the direction of arrow(C).

* NOTE

- 1) When reassembling, do not touch the Video Head Tip with fingers or tools.

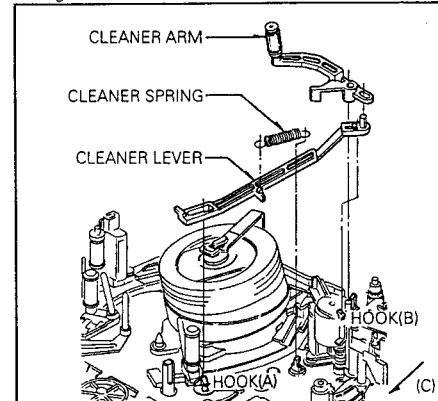


Fig. B-1 Auto Head Cleaner Assembly

2. Drum Assembly and Drum Base(Fig. B-2)

- 1) Remove the Auto Head Cleaner Assembly.
- 2) Unplug the connector with the Deck Mechanism Assembly turned over.
- 3) Loosen the screw(A) and then lift up the Drum Brush.
- 4) Remove two screws(B) and then lift up the Drum Assembly and Drum Base from the Deck Mechanism Assembly.
- 5) Separate the Drum Assembly from the Drum Base by loosening three screws(C) on the back of Drum Base.

* NOTE

- 1) When disassembling and reassembling
 - ① Do not touch the Video Head tip with fingers or tools.
(Give special attention to disassembling and reassembling of Auto Head Cleaner Assembly)
 - ② After reinstalling the Drum Brush, the Drum Brush should be aligned with the center of vertical axis of Drum Assembly.
 - ③ After completing the reassembly, adjust the transportation system and the Servo P.G.

3. Upper and Lower Drum Assembly (Fig. B-3)

- 1) Remove the Drum Assembly and Drum Base from the

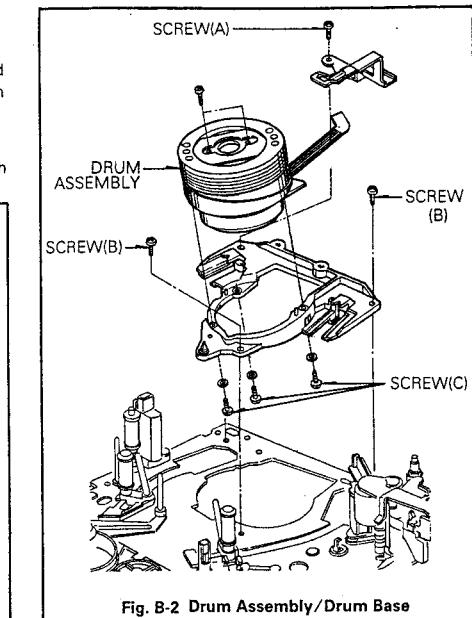


Fig. B-2 Drum Assembly/Drum Base

Deck Mechanism Assembly.

- 2) Separate the Drum Assembly from the Drum Base.
- 3) Remove two screws(A).
- 4) Separate the upper Drum Assembly from the Lower Drum Assembly.

* NOTE

- 1) When disassembling and reassembling
 - ① Do not touch the Video Head Tip with fingers or tools.
 - ② Make sure that the color(white) marked on the P.C.B of the upper Drum should coincide with the color(Green) marked on the Flange Assembly.

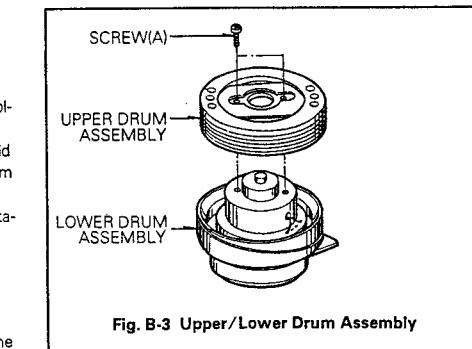


Fig. B-3 Upper/Lower Drum Assembly

4. A/C(Audio/Control) Head Assembly (Fig.B-4)

- 1) Unplug the connector
- 2) Remove the Nut(A), and then lift up the A/C Head Assembly.
- 3) Remove the Azimuth Adjusting Screw.
- 4) Remove two screws(B),(D) and then separate the A/C Head Assembly from the Base A/C Head Assembly.

* NOTE

- ① When disassembling
First of all, release the spring A/C.
- ② Do not touch the A/C Head Tip with fingers or tools.
- ③ After reinstalling the Audio Control Head Assembly, adjust the Tilt, Azimuth and Height of A/C Head.

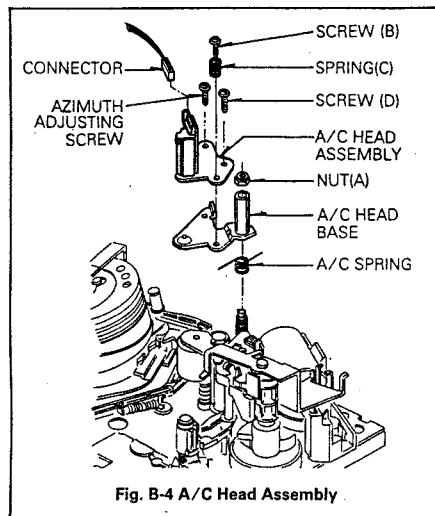


Fig. B-4 A/C Head Assembly

5. Pinch Lever Assembly(Fig. B-5)

- 1) Remove one Nut, and then remove the Dew Bracket.
- 2) Lift up Pinch Lever Assembly.
- 3) Remove the Pinch Spring, and remove the Pinch Lever.
- 4) Remove the Stopper Spring and remove the Pinch Stopper by lifting it up when the Hook of Pinch Stopper is aligned with the hole of Pinch Arm while rotating the Pinch Stopper in the counterclockwise direction.
- 5) Remove the Pinch Cap, and then remove the Pinch Roller Assembly.

* NOTE

- ① When disassembling and reassembling
Be careful not to get any foreign substance on the Roller.
- ② When disassembling the Pinch Cap, be careful not to damage the Pinch Arm.

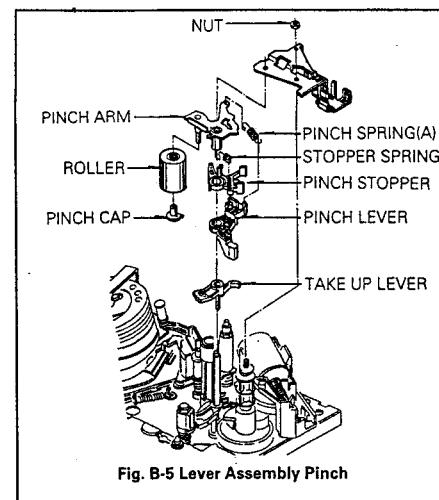


Fig. B-5 Lever Assembly Pinch

6. Loading Motor Assembly(Fig. B-6-1, B-6-2)

- 1) Remove the Dew Bracket.
- 2) Unplug the connector from the Junction P.C.B Assembly
- 3) Remove two screws(A).
- 4) Remove the worm wheel by pushing it down.
- 5) Remove the Loading Motor Assembly by pushing(C) and (D) outward.
- 6) Remove the worm Gear Assembly from the Loading Motor Assembly by pushing it.

* NOTE

- 1) When reassembling
① Make sure that the worm assembly is seated in the axis of Loading Motor.
- ② Two grooves(G) of Loading Motor should be turned up and two projections(F) of Bracket Assembly should be seated in each at the two holes(E)(Fig. B-6-1).
- ③ Take notice of the polarity of the Loading Motor.

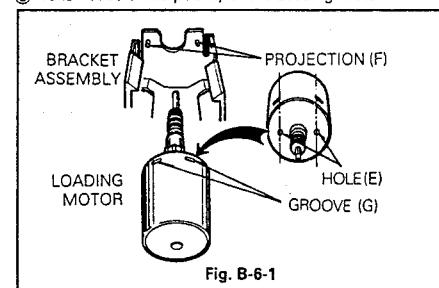


Fig. B-6-1

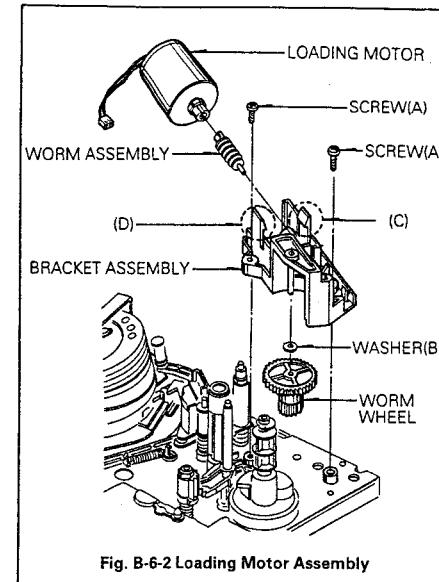


Fig. B-6-2 Loading Motor Assembly

7. Take Up Lever(Fig. B-7)

- 1) Remove the Dew Bracket.
- 2) Remove the Pinch Lever Assembly.
- 3) Remove the Take-Up Lever by pushing the hook(A) outward.

* NOTE

- 1) When disassembling and reassembling
① When disassembling the Take-Up Lever, be careful not to break the Hook(A).
- ② When reassemble the Take-Up Lever, align the appendant Gear of Lever Take-Up with the appendant Gear of Take-up Arm
- ③ Reassemble the Take-Up Lever completely by hooking (A).

8. Take Up Arm Assembly(Fig. B-8)

- 1) Remove the Dew Bracket, Pinch Gear, and the Take-Up Lever
- 2) Remove one Nut(A).
- 3) Remove the Take-Up Arm Assembly by lifting it up.
- 4) Remove the spring(B).

* NOTE

- 1) When reassembling
① Align the Gear of Take-Up Arm with the Gear of Take-Up Lever.

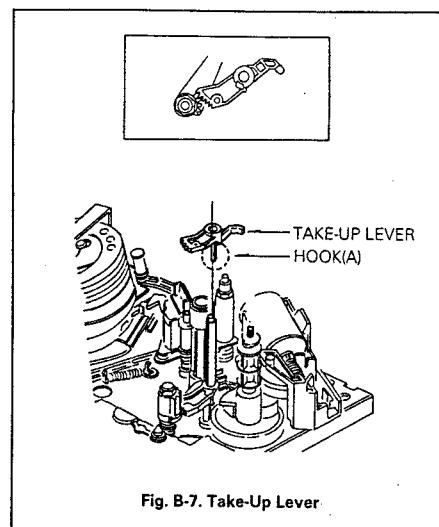


Fig. B-7. Take-Up Lever

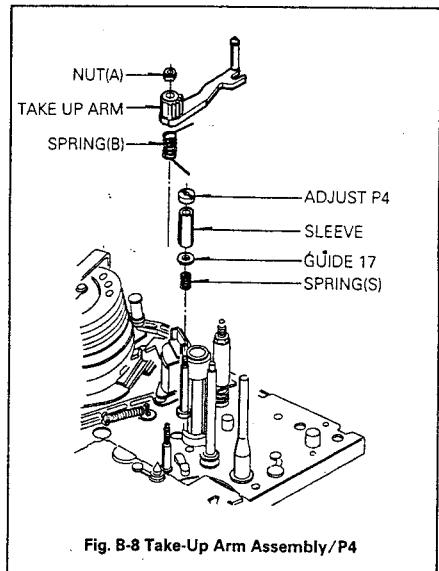


Fig. B-8 Take-Up Arm Assembly/P4

9. P4 Assembly(Fig. B-8)

- 1) Remove the Adjust P4.
- 2) Remove the Sleeve.
- 3) Remove the Guide 17.
- 4) Remove the Spring.

10. Pinch Gear

- 1) Remove one Nut(A) and then remove the Dew Bracket.
- 2) Remove the Pinch Lever Assembly by lifting it up.
- 3) Remove the Loading Motor Assembly.
- 4) Remove the Take Up Lever.
- 5) Remove the Pinch Gear Assembly.

* NOTE

- 1) When reassembling, align the hole(A) of Pinch Gear with the hole of chassis, and the hole(C) of Pinch Gear with the groove(D) of the P.C.Gear. Hole(E) of chassis should be aligned with the hole of P.C.Gear.

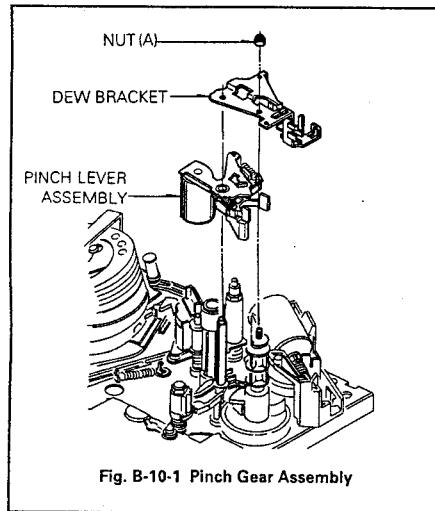


Fig. B-10-1 Pinch Gear Assembly

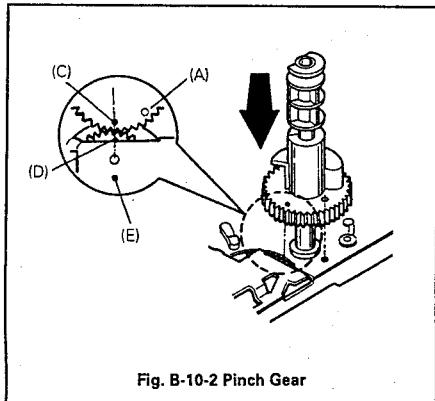


Fig. B-10-2 Pinch Gear

11. FE(Full Erase) Head Assembly(Fig. B-11)

- 1) Unplug the connector.
- 2) Remove one screw(A), and then remove the FE Head.

* NOTE

- 1) When disassembling and reassembling
① Do not touch the Video Head Tip with fingers or tools.

12. P1 Assembly(Fig. B-11)

- 1) Remove the Adjust P1.
- 2) Remove the Guide 17.
- 3) Remove the Roller.
- 4) Remove the Sleeve.
- 5) Remove the Guide 17.
- 6) Remove the Spring.

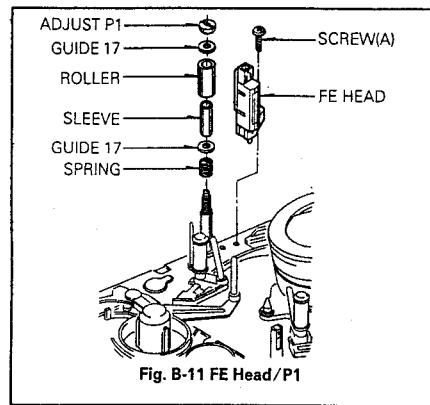


Fig. B-11 FE Head/P1

13. Tension Arm Assembly(Fig. B-13)

- 1) Remove one screw(C).
- 2) Remove the Tension Spring.
- 3) Remove the Tension Arm Assembly by pushing hooks outward with the Deck Mechanism Assembly turned over.
- 4) Remove the Tension Band Assembly from the Tension Arm by pushing Hooks of Holder(A).

* NOTE

- 1) When disassembling and reassembling, give special attention to the disassembling and reassembling of Tension Arm Assembly, because the Tension Band is interposed between the Supply Reel and the Soft Brake.

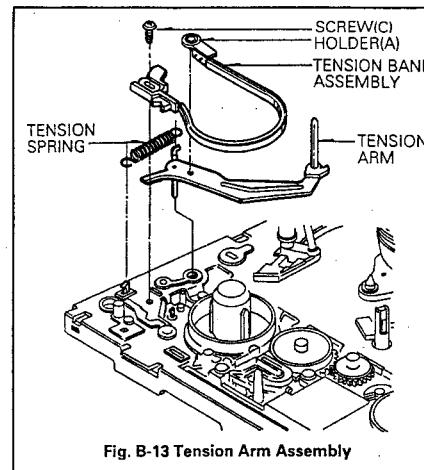


Fig. B-13 Tension Arm Assembly

14. Supply Soft/Supply Main/Take-Up Soft /Take-Up Main Brake Assembly

- 1) Supply Soft Brake(SSB)
① Remove the SSB Spring.
② Remove the SSB.
- 2) Supply Main Brake(SMB)
① Remove the SMB Spring.
② Remove the SMB.
- 3) Take Up Soft Brake(TSB)
① Remove the TSB Spring.

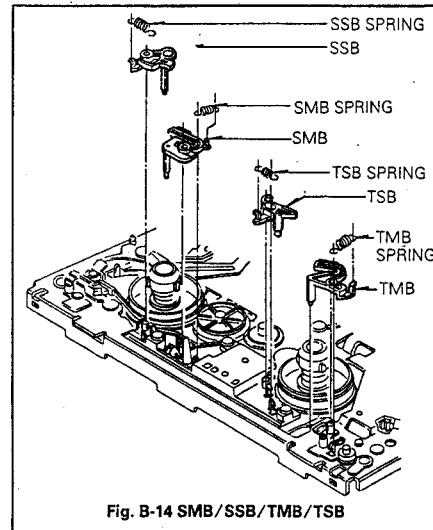


Fig. B-14 SMB/SSB/TMB/TSB

- ② Remove the TSB.
- 4) Take-Up Main Brake(TMB)
① Remove the TMB Spring.
② Remove the TMB.

15. Bracket F/R(FF/Rewind) Assembly (Fig. B-15)

- 1) Remove the TMB.
- 2) Remove the Washer(A), and then remove the Gear F.R.
- 3) Remove three screws, and then remove Bracket F/R Assembly from the Deck Mechanism Assembly.
- 4) Remove the Washer(B), and spring Up/D, and then remove the Gear Up/D.
- 5) Remove the shaft(C), and then remove the Arm F.R, Lever F.R and Spring F.R.

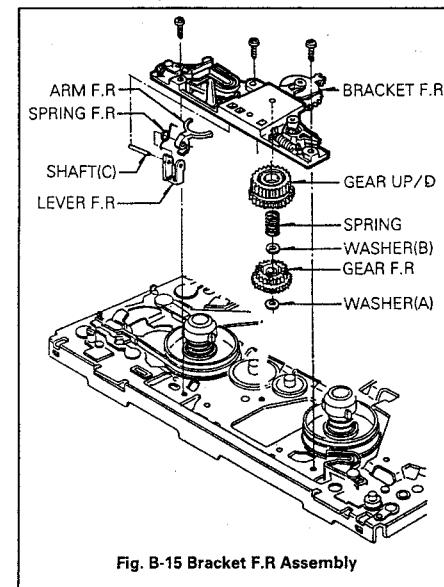


Fig. B-15 Bracket F.R Assembly

16. Supply Reel Assembly(Fig. B-16)

- 1) Remove the Tension Band Assembly.
- 2) Remove the Bracket F.R.
- 3) Lift up the Supply Reel Assembly from the Deck Mechanism Assembly.
- 4) Separate the Reel Cap from the Supply Reel by taking it out of Hooks(A).

* NOTE

- 1) When reassembling
① Make sure that the Supply and Take Up Reel are not exchanged.
- ② After reinstalling the Supply Reel Assembly, Adjust the Tension.

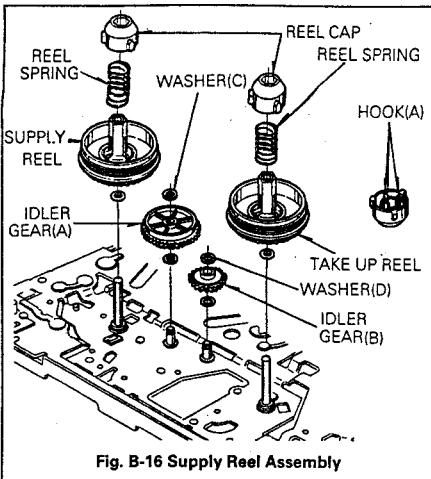


Fig. B-16 Supply Reel Assembly

17. Idler Gear(A), (B)(Fig. B-16)

- 1) After removing the Supply Reel, and supply Main Brake Assembly, remove the washer(C) and remove the Idler Gear(A).
- 2) Remove the Washer(D) and remove the Idler Gear(B).

18. Pulley Gear Assembly(Fig. B-18)

- 1) Turn over the Deck Mechanism Assembly.
- 2) Remove the Capstan Belt.
- 3) Remove the Washer(A) and lift up the Pulley Gear.

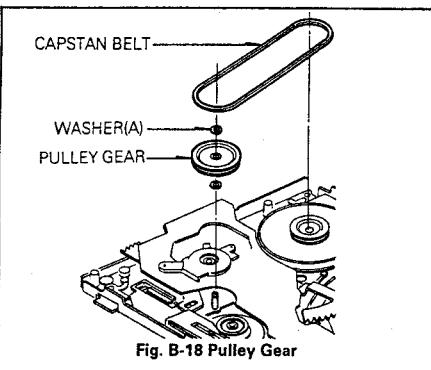
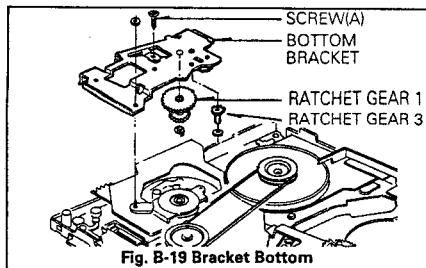


Fig. B-18 Pulley Gear



4) Remove the washer, and then remove Ratchet Gear 3 from the Bottom Bracket.

20. Junction PCB(Printed Circuit Board) Assembly (Fig. B-20-1)

- 1) Remove the Bottom Bracket Assembly.
- 2) Remove two screws(A),(B) and then remove the Junction P.C.B Assembly.
- 3) Remove the Mode Switch from the Junction P.C.B Assembly.
- 4) Remove the Reel Sensors, Sensor LEDS and each holder from the Junction P.C.B(Fig. B-20-2).

* NOTE

- 1) When reassembling the Mode Switch, the groove(V) and (U) of Mode Switch should be at their original place in the Eject Mode.

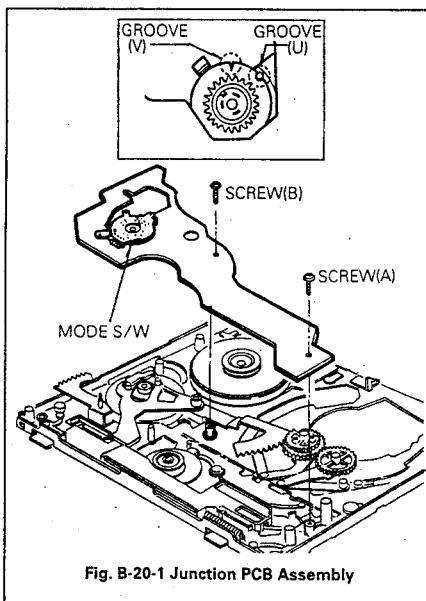
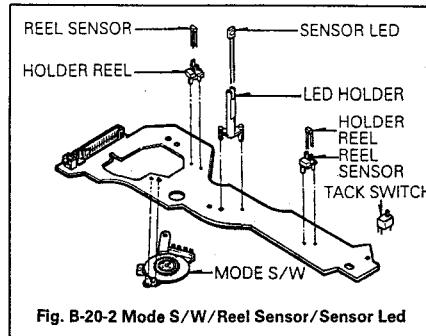


Fig. B-20-1 Junction PCB Assembly

19. Bracket Bottom Assembly(Fig. B-19)

- 1) Remove one screw(A).
- 2) Remove one Hexagonal Nut, and then lift up the Bracket Bottom Assembly.
- 3) Remove one Washer, and lift up the Ratchet Gear 1.



21. Capstan Motor and Brake Assembly (Fig. B-21-1)

- 1) Remove the Junction P.C.B Assembly
- 2) Hook the end of Capstan Brake Spring to the projection of Capstan Brake and then remove the Capstan Brake Assembly by lifting it up(Fig. B-21-2).
- 3) Remove two Screws(A), and then remove the Bracket C-Guide.
- 4) Remove the Connector.
- 5) Remove three screws(B), and then remove the Capstan Motor Assembly from the Deck Mechanism Assembly.

* NOTE

- 1) When disassembling and reassembling, hook end of the spring on the projection of Cap-Brake and remove it by lifting it up. Reassemble it in the opposite manner.

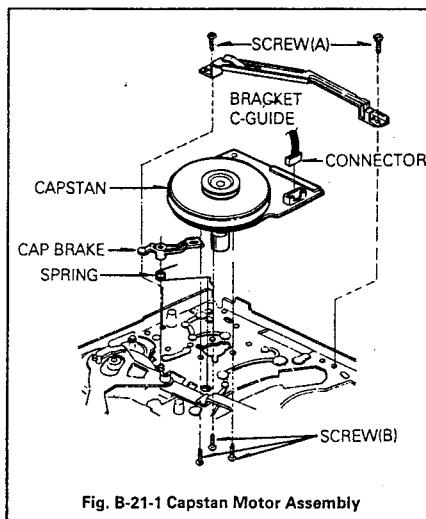


Fig. B-21-1 Capstan Motor Assembly

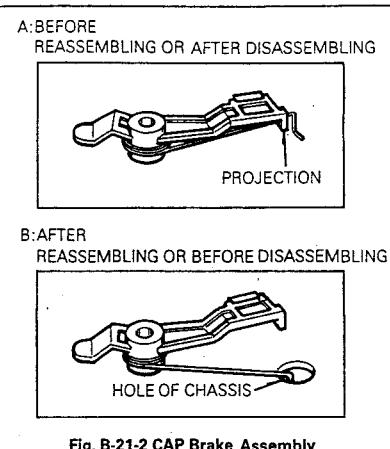


Fig. B-21-2 CAP Brake Assembly

22. Function Plate(Fig. B-22)

- 1) Remove two screws(B) in Eject Mode.
- 2) Remove the Function Plate Spring.
- 3) Remove the Function Plate.

* NOTE

- 1) When reassembling, the groove of Lower part of Function Plate should be aligned with the shaft of Tension Lever Assembly(Fig. B-28).

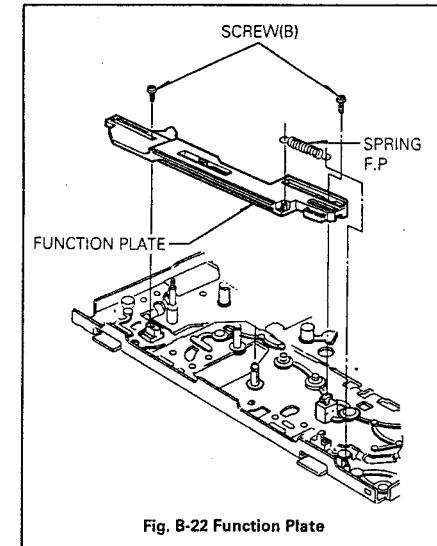


Fig. B-22 Function Plate

23. Ratchet Lever Assembly(Fig. B-23)

- 1) Remove the Function Plate.
- 2) Remove the Junction P.C.B Assembly.
- 3) Remove the Washer(A) and then remove the Ratchet Lever Assembly.
- 4) Remove the Ratchet Spring.
- 5) Remove the Ratchet Lever from the Ratchet 17 by lifting it up when the hook of it is aligned with the hole of Ratchet 17 while rotating it counterclockwise direction.
- 6) Remove the Washer(B), and turn over the Ratchet 17 and then remove the Slant Pin, Spring F, Lever.

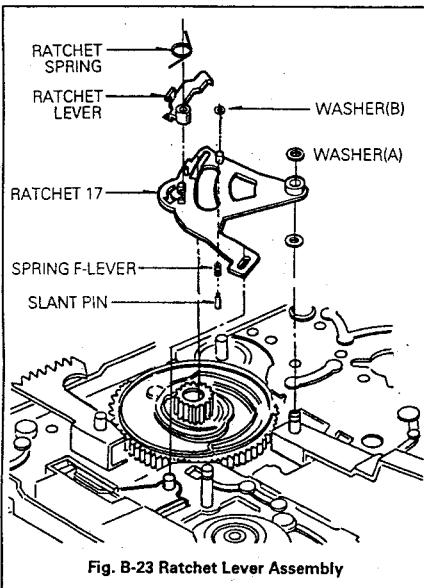


Fig. B-23 Ratchet Lever Assembly

24. Cam Gear/Rack Gear T/Rack Gear FL(Fig. B-24-2)

- 1) Remove the washer(A) and remove the Ratchet Lever Assembly.(Fig. B-24-1).
- 2) Remove the washer(B), and then remove the Cam Gear (Fig. B-24-2).
- 3) Remove the Rack Gear F.L.(Fig. B-24-3)
- 4) Remove the Rack Gear T.(Fig. B-24-3)

* NOTE

- 1) When reassembling
 - ① Align the Projection of Rack Gear T with the hole of Loading Gear.
 - ② Drive the Rack Gear F.L in the direction of arrow(D).
 - ③ Hole of Cam should be aligned with the hole of chassis, and the groove(■) of Cam Gear should be aligned with the hole of PC Gear(Fig. B-25)

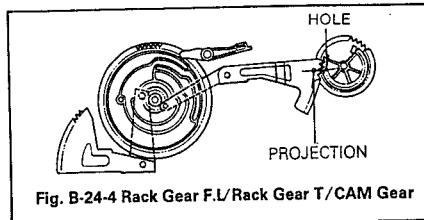
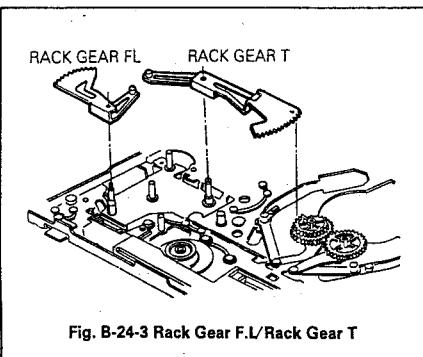
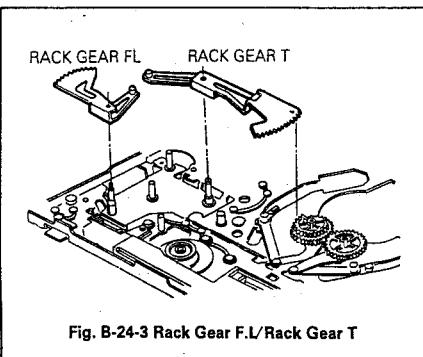
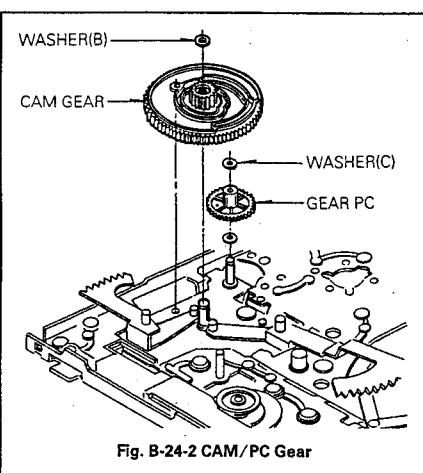
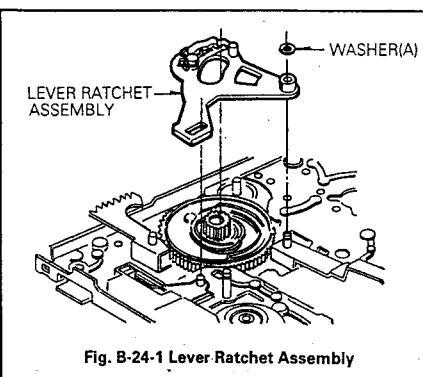


Fig. B-24-4 Rack Gear F.L./Rack Gear T/CAM Gear

25. PC Gear(Fig. B-25)

- 1) Remove the washer(C).
- 2) Remove the P.C Gear by lifting it up.

* NOTE

- 1) When reassembling
 - ① The Groove of PC Gear should be aligned with the groove(V) of Cam Gear, and another hole of it should be aligned with the hole of chassis (Fig. B-25).

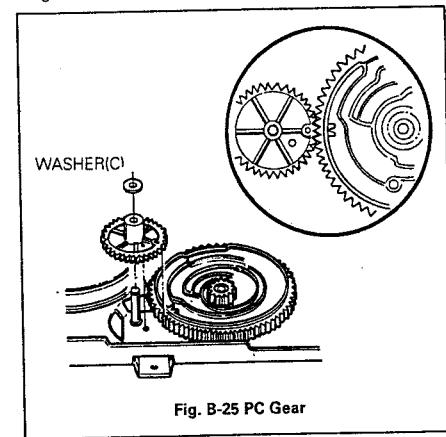


Fig. B-25 PC Gear

26. P2 and P3 Slant Assembly(Fig. B-26)

- 1) After finishing the disassembly of Drum Assembly, remove the P2 and P3 Slant Assembly by turning the Loading Gear(R) in the clockwise direction.(Loading direction)
- 2) Loosen the set screws.
- 3) Remove the Roller Guide from the Slant Base.

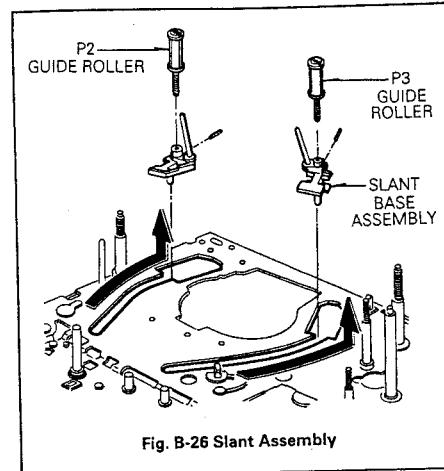


Fig. B-26 Slant Assembly

* NOTE

- 1) When disassembling and reassembling
 - ① Use a Hexagonal wrench to remove set screw.
 - ② Take notice that the P2 and P3 Slant Assembly should not be changed from their original place.

27. Loading Gear Assembly(L),(R)(Fig. B-27)

- 1) Remove the Cam Gear, Rack-T.
- 2) Remove the P2 and P3 Slant Assembly by turning the Loading Gear(L),(R) in the Loading direction
- 3) Lift up the Loading Gear Assembly(L),(R) from the Deck Mechanism Assembly.
- 4) Remove the Spring Load(L),(R).
- 5) Separate the Loading Gear(L),(R) from Lever Load(L),(R).

* NOTE

- 1) When reassembling
 - ① Make sure that the Loading Gear(L) and (R) should not be changed from their original place.
 - ② Align the groove of Loading Gear(L),(R) with the groove of Gear(R),(O).

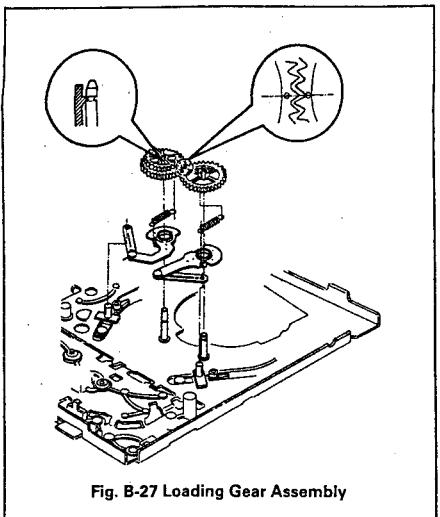


Fig. B-27 Loading Gear Assembly

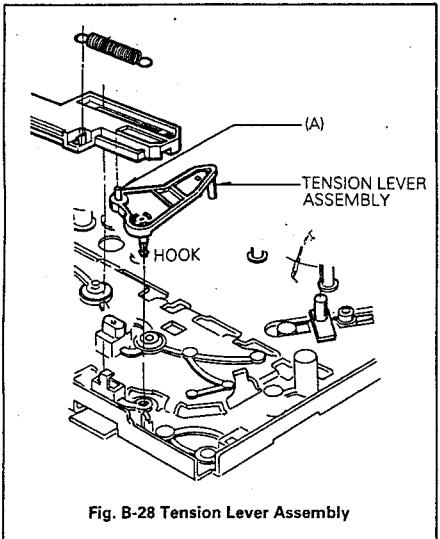


Fig. B-28 Tension Lever Assembly

28. Tension Lever Assembly(Fig. B-28)

- 1) Remove the Function Plate.
- 2) Remove the Tension Lever Assembly by pushing hooks inward.

* NOTE

- 1) When reassembling
 - ① Set the part(A) of Tension Lever Assembly in the groove of Lower part of Function Plate.
 - ② After reinstalling the Tension Lever Assembly, adjust the Tension Post and the Tension with a Tension Cassette.

29. Clutch Gear Assembly(Fig. B-29)

- 1) Remove the Pulley Gear.
- 2) Remove the Plate Function.
- 3) Remove the washer(A), and then remove the Clutch Gear Assembly.

* NOTE

- 1) When reassembling
 - ① Do not disassemble the Clutch Gear Assembly any further, because Torque adjustment is not adjustable.

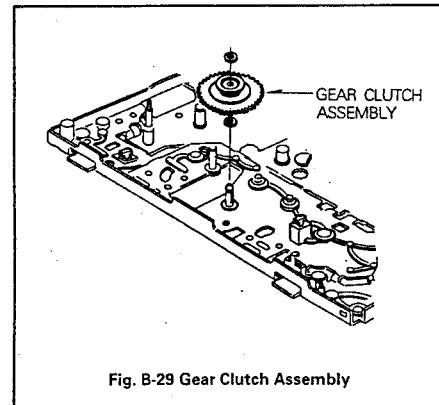


Fig. B-29 Gear Clutch Assembly

30. Take Up Reel Assembly(Fig. B-16)

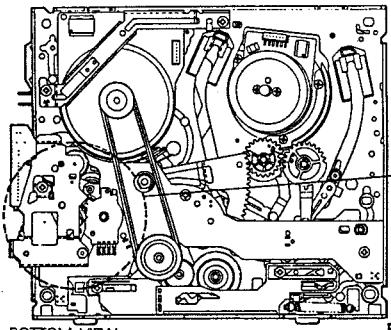
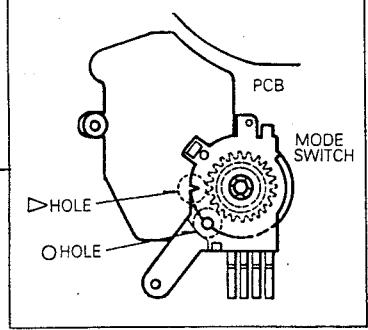
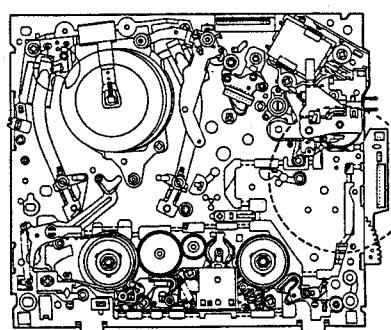
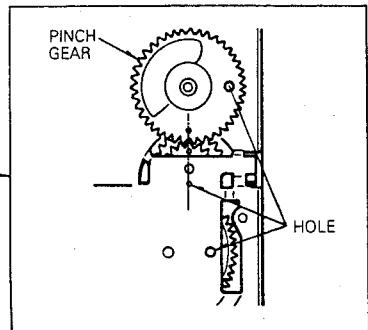
- 1) Remove the TMB(Fig. B-14)
- 2) Lift up the Take-up Reel Assembly from the Deck Mechanism Assembly.
- 3) Separate the Reel Cap and Spring from the Take-Up Reel by releasing Hooks(S).

MECHANISM ADJUSTMENTS

• Tools and Fixtures for Deck

1. Back tension meter Parts No ; D00-D006	2. NTSC alignment tape Parts No NTSC ; DTN-0001 PAL ; DTN-0002	3. Master plane Parts No ; RJ10028
4. Torque gauge Parts No ; D00-D002	5. Torque gauge adaptor Parts No ; D09-R001	6. Reel table height fixture Parts No ; RJ10027
7. Post height adjusting driver Parts No ; DTL-0005	8. M3 Nut driver Parts No ; DTL-0006	

1. Mechanism State Switch(Mode Switch) Check

Purpose: To detect accurately the mechanism state and prevent the mechanism from malfunction.		
Test Equipment/Fixture	VCR State	Check Point
● Blank tape	● Eject Mode (with cassette ejected)	● Mechanism state switch (Mode Switch and Cam)
Check Procedure		
1) Turn the VCR on and eject the tape by pressing eject button. 2) Remove the Cabinet Top and Main P.C.Board, and then turn the Cam so as to align the hole of chassis with the hole of Cam and Pinch Gear, and Holes of Pinch Gear and P.C. Gear with each other. 3) Remove the Bottom Cover and then check that the grooves(V) and (O) of Mode S/W are at their original place.		
4) If the above alignment is not obtained, adjust as follows. (1) Remove the Bracket Assembly Bottom and the Capstan Belt in the state of power off. (2) Remove the P.C.B Assembly, place the grooves (V) and (O) of mode switch at their original place, and then reassemble the P.C.B Assembly. (3) Turn the power on and perform the various operations to check that the loading and the unloading are correct.		
Check Diagram		
  <p>Fig. C-1-1</p>		
  <p>Fig. C-1-2</p>		

2. Preparation for Adjustment (To set VCR to the loading state without inserting a cassette)

- 1) Unplug the power cord from the AC outlet.
- 2) Remove the Cabinet Top and Front Loading mechanism.
- 3) Plug the power cord into the AC outlet.
- 4) Turn the VCR on and push the tact switch in the PCB Assembly.

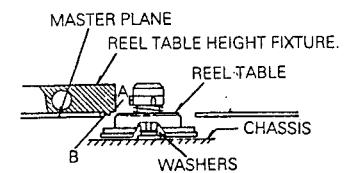
The VCR can accept input of each mode in this case. However the rewind and review operation cannot be performed for more than a few seconds because the take-up reel table is in the stop state and reel pulses cannot be detected.

(NOTE)

Always return the VCR to the Front Loading Mechanism Assembling State in the following order after the above operations have been performed.

- 1) Press the Eject button after turning the power on.
- 2) Wait for about 10 seconds until searching out the assembly position.
- 3) Assemble the Front Loading Mechanism and connect the Front Loading Mechanism Connector.
- 4) Refer to the "Front Loading Mechanism Disassembly" which is described previously.

3. Reel Table Height Adjustment

Purpose: To set the reels of the cassette to the specified height, thus determine the height of tape.			
Test Equipment/Fixture	Preparation for adjustment	VCR State	Adjustment Points
● Master Plane	1) Remove the Front Loading Mechanism		● Washer under the Supply and Take-Up Reel Tables.
● Reel Table Height Fixture	2) Mount the Master Plane and place the Reel Table Height Fixture on it.		
Adjustment procedure			Adjustment Diagram
1) Check that the Reel Table is between sections A and B of the Reel Table Height Fixture. 2) If the table is not between sections A and B of the Fixture, replace the washers(two types, 0.3mm and 0.5mm thick) in the Reel Table or adjust them.			 <p>MASTER PLANE REEL TABLE HEIGHT FIXTURE REEL-TABLE CHASSIS WASHERS</p> <p>SUPPLY AND TAKE-UP REEL TABLE</p>
			Fig. C-3

4. Tension Post Position and Tension Adjustment

Purpose: To make the tension of tape constant so that the contact between the video heads and tape is stabilized.

Test Equipment/Fixture	VCR State	Adjustment Point
● Tension Meter (Tension adjustment)	● Play without cassette and with a Tension Meter	● Holder Band(A)

Adjustment Procedures

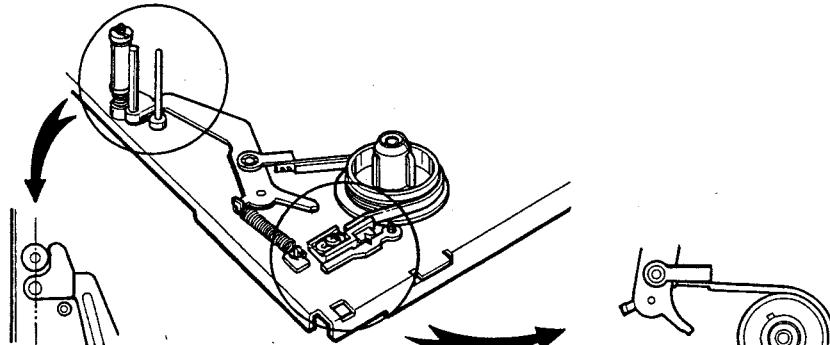
Position Adjustment

- 1) Perform loading without inserting a tape and loosen the screw that attaches the Band Holder(B) to the D-Deck Mechanism Assembly.
- 2) Insert the (-)-type driver between the Band Holder(B) and the "V" groove of the chassis.
- 3) Move the Band Holder(B) right and left and align the center of tension post with the center of P1.
- 4) Tighten the screw that attaches the Band Holder(B) to Deck Mechanism Assembly.

Tension Adjustment

- 1) Play the Tension Meter and read the Tension Meter: $35\text{g}\cdot\text{cm} \pm 2.5\text{g}\cdot\text{cm}$ (reference value).
- 2) If the result is abnormal.
 - (1) over the standard: loosen the screw, move the Band Holder(B) right a little and then tighten the screw and make sure that this adjustment is correct.

Adjustment Diagram



ALIGN THE CENTER OF P1 AND
TENSION POST

Fig. C-4-1

Fig. C-4-2

5. Checking Torque

Purpose: It is necessary to check the tension, torque and compression force at the tape take-up section and moving section to make the tape run smoothly and satisfy the basic performance of the VCR. Check these if the tape does not run smoothly or the tape speed is abnormal.

Test Equipment/Fixture	VCR state		
Item	VCR Operation mode	Measurement Reel	Measurement Values
Main brake torque.	Eject	Supply and take-up reels	600g·cm or more
Slack removal torque	Unloading(power off)	Supply reel	110~200g·cm
Fast forward torque	Fast forward	Take-up reel	400g·cm or more
Rewind torque	Rewind	Supply reel	400g·cm or more
Play take-up torque	Play	Take-Up reel	90~130g·cm

Checking Method

The values are measured by using a torque gauge and torque gauge adaptor with the torque gauge fixed.

Note: This value is measured when the VCR is shifted in the unloading direction from the fast forward or rewind mode and quick braking is applied to both Reel Tables.

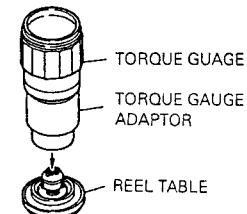
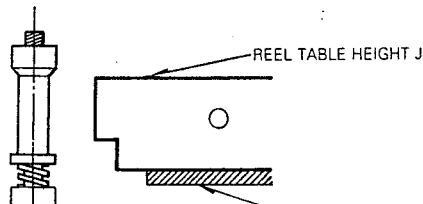
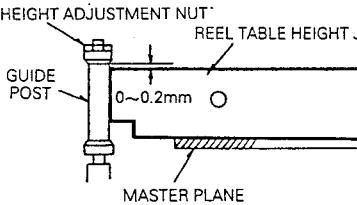
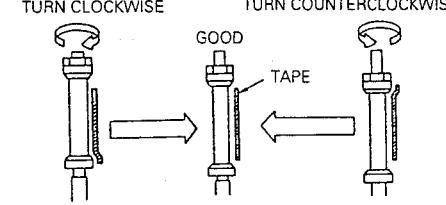
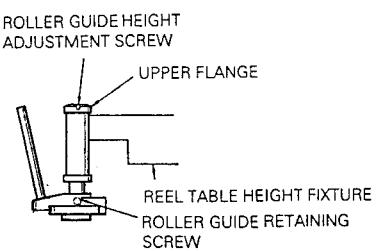


Fig. C-5

6. Guide Post Height Adjustment

Purpose: To control tape height		
Test Equipment/Fixture	VCR State	Adjustment Point
<ul style="list-style-type: none"> ● Master Plane ● Blank Tape ● Reel Table Height Jig ● Post Height Adjusting Driver ● M3 Nut Driver 	<ul style="list-style-type: none"> ● Mount the Master Plane and place the Reel Table Height Jig on it. 	<ul style="list-style-type: none"> ● Nuts on Impedance Roller ● Guide Post
<p>1) Set the clearance between the bottom of the P1 Roller Flange and under cut of Reel Table Height Fixture to 0~0.1mm(Fig. C-6-1).</p> <p>2) Set the clearance between the bottom of the Guide Post upper flange and top of the Reel Table Height Jig to 0~0.2mm(Fig. C-6-2).</p> <p>3) Load and run the Tape and check that the tape does not ride over the upper and lower flanges of the guide post.</p>		<p>4) If the tape rides over either flange, adjust the height of P1 Roller and Guide Post as follows(Fig. C-6-3).</p> <ul style="list-style-type: none"> • If the tape rides over the upper flange, turn the nut counterclockwise. • If the tape rides over the lower flange, turn the nut clockwise.
Adjustment Diagrams		 <p>Fig. C-6-1</p>
 <p>Fig. C-6-2</p>		 <p>Fig. C-6-3</p>

7. Guide Roller Height Adjustment

Purpose: To regulate the height of tape so that the bottom of tape runs along the tape guide line on the lower drum.		
A. Coarse Adjustment		
Test Equipment/Fixture	VCR State	Adjustment Point
<ul style="list-style-type: none"> ● Master Plane ● Reel Table Height Fixture ● Hexagonal Wrench ● Post Height Adjusting Driver 	<ul style="list-style-type: none"> ● Mount the Master Plane and place the Reel Table Height Fixture on it. 	<ul style="list-style-type: none"> ● Roller Guide Height Adjustment Screws on the Supply and Take-Up Guide Rollers.
Adjustment Procedure		Adjustment Diagram
<p>1) Align the bottom of the Guide Roller's upper flange and the top of the Reel Table Height Fixture.</p> <p>2) Perform the precise adjustment next.</p> <p>3) When the Guide Roller is damaged, release the Guide Roller retaining screw and then replace the Guide Roller.</p>		 <p>Fig. C-7-1</p>

B. Precise Adjustment

Test Equipment/Fixture	Test Equipment Connection Points	VCR State	Adjustment Point
<ul style="list-style-type: none"> Oscilloscope Post Height Adjusting Driver Alignment Tape Hexagonal wrench 	<ul style="list-style-type: none"> CH-1:PB RF Envelope CH-2:SW 3-Hz Head Switching Output Point RF Envelope Output Point 	<ul style="list-style-type: none"> Play an alignment tape 	<ul style="list-style-type: none"> Guide Roller Height Adjustment Screws.

Adjustment Procedure

- Play an alignment tape after connecting the probe of the oscilloscope to RF Envelope Output Test Point and Head Switching Output Test Point.
- Tracking control(in PB mode):Center position(When this adjustment is performed after the drum assembly has been replaced, set the tracking control so that the RF output is maximum.)
- Height adjustment screw:Flatten the RF waveform.
- Turn(Move) the tracking control(playback) clockwise and counterclockwise.(to the right and left)
- Check that the drops of RF output are uniform at the start and end.

Waveform Diagrams

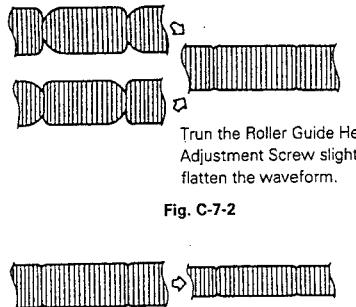
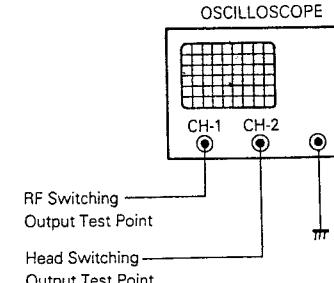


Fig. C-7-2

Connection Diagram



OSCILLOSCOPE

CH-1 CH-2

RF Switching Output Test Point

Head Switching Output Test Point

Fig. C-7-3

Tracking control at center Turn(Move) the tracking control to both directions.

8. Audio/Control(A/C) Head Adjustment

Purpose: To keep the contact between the tape and head so that the specified track is recorded and played back.

A. Coarse Adjustment

Test Equipment/Fixture	VCR State	Adjustment Points
<ul style="list-style-type: none"> Master Plane Reel Table Height Fixture M3 Nut Driver 	<ul style="list-style-type: none"> Mount the Master Plane and place the Reel Table Height Fixture on it. 	<ul style="list-style-type: none"> Special screw Cone Point Screw for tilt
Blank tape	Run the blank tape	<ul style="list-style-type: none"> Azimuth Adjustment Screw A/C Head Adjuster

Adjustment procedure/Adjustment Diagram

- Tighten the spring section of the special screw so that it protrudes 6.4mm(approx.) over the top of Head Base(1).

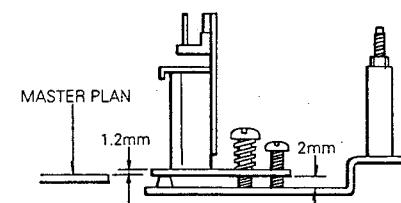
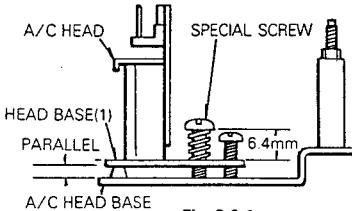
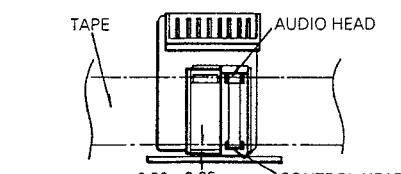
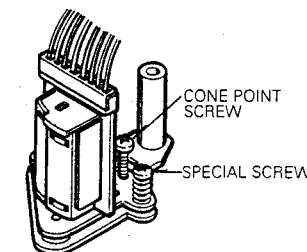


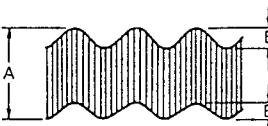
Fig. C-8-3

- Remove the adjustment fixture, load a blank tape and set the VCR to the play mode.
- Check that there is no conspicuous curling and riding over around the A/C head. If there is conspicuous curling or riding over, readjust the Cone Point Screw, Azimuth Adjustment Screw and A/C Head Adjuster. When the bottom edge of tape is 0.20~0.25mm from the bottom edge of the control head's core, the height of A/C head is ideal.

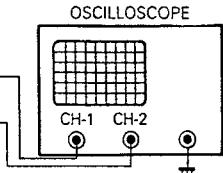


- Turn the A/C Head Adjuster until the clearance between the Master Plane and Head Base(1) is approx 1.2mm.
- Perform the precise adjustment continuously.

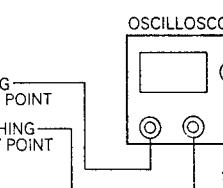
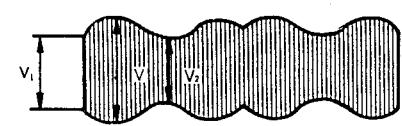
B. Precise Adjustment

Test Equipment/Fixture	Test Equipment Connection Point	VCR State	Adjustment Points
● Oscilloscope	● Audio output jack	● Play an alignment tape 1KHz, 7KHz sections	● Azimuth Adjustment Screw ● A/C Head adjuster ● Cone point screw
● Alignment tapes			
● M3 Nut Driver			
Adjustment Procedure		Waveform Diagram	
1) Connect the probe of oscilloscope to audio output jack.		 <p>A: Maximum BB': Minimum</p>	
2) Adjust the Azimuth Adjustment Screw, A/C Head adjuster and cone point screw slightly and alternately so that a Audio 1KHz output is maximum and flat.(minimum fluctuation)			
3) Adjust the Azimuth Adjustment Screw slightly and alternately so that the Audio 7KHz output is maximum.			
Fig. C-8-5			

9. X-Value Adjustment

Purpose: To obtain compatibility with other VCRs.			
Test Equipment/Jigs	Test Equipment Connection Points	VCR State	Adjustment Points
● Oscilloscope	● CH-1:PB RF Envelope ● CH-2:SW 30Hz	● Play an alignment tape	● X Adjust
● Alignment tapes	● Head Switching Output Test Point		
● Post Height Adjusting Driver	● RF Envelope Output Test Point		
Connection Diagram			
		Adjustment Procedure <p>1) Insert a cassette tape, and then "AUTO TRACKING" will be displayed on the Digitron, then push the Tracking \oplus or \ominus Keys one time as soon as possible to make the VCR release the Auto Tracking. 2) Turn the Adjust X to the maximum RF Envelope level when the VCR is free from the Auto tracking. 3) If RF envelope output is maximized from the center click position in right direction(clockwise), set the tracking control to the center and turn the X Adjust counterclockwise. 4) If in left direction(counterclockwise), turn it clockwise by same method. 5) In case of the 30 μm, head will trace over a 60 μm width track, readjust it so that RF Envelope output begins falling at the same angle when tracking control is turned either left or right.</p>	
Fig. C-9			

10. Adjustment after Replacing Drum Assembly(Video Heads)

Purpose: To suppress drift in the height relative to the Guide Roller and drift of the X Value after replacing the drum.			
Test Equipment/Fixture	Test Equipment Connection Points	VCR State	Adjustment Points
● Oscilloscope	Checking the flatness ● CH-1:PB RF Envelope ● CH-2:SW 30Hz	● Run the blank tape ● Play an alignment tape	● Guide Rollers Precise Adjustment ● Switching point ● Tracking point ● X-Value
● Alignment tapes	● Blank tape		
● M3 Nut Driver	● Head Switching Output Point ● RF Envelope Output Point		
Connection Diagram			Waveform Diagram
			 <p>$V_1/V \text{ MAX} > 0.7$ $V_2/V \text{ MAX} > 0.8$ RF ENVELOPE OUTPUT</p>
			Fig. C-10

11. Maintenance/Inspection Procedure

(1) Required Maintenance

The recording density of a VCR is much higher than that of an audio tape recorder. VCR components must be very precise, at tolerances of 1/1000mm, to ensure compatibility with other VCRs. If any of these components are worn or dirty, the symptoms will be the same as if the part is defective. To ensure good picture, periodic inspection and maintenance, including replacement of worn out parts and lubrication, are necessary.

(2) Scheduled Maintenance

Schedules for maintenance and inspection are not fixed because they vary greatly according to the way in which the customer uses the VCR, and the environment in which the VCR is used.

But, in general home use, a good picture will be maintained if the inspection and maintenance is made every 1,000hours. The table below shows the relation between time used and inspection period.

Table 1

When inspection is necessary	About 1 year	About 18 months	About 3 years
Average hours used per day			
One hour	██████████		
Two hours	██████████		
Three hours	████		

Table 2

Phenomenon	Inspection
Poor S/N, no color	Dirt on video head or worn video head
Tape does not run or tape is slack	Dirt on pressure roller, belt or flywheel belt
Vertical jitter, horizontal jitter	Dirt on video head or in tape transport system
Color beats	Dirt on full-erase head
Low volume or sound distorted	Dirt on audio/control head
Fast forward or rewind is not done or rotation is slow	Dirt on belt

(4) Supplies Required for Inspection and Maintenance

- (1) Greases Kanto G-31(or equivalent)
- (2) Alcohol(or freon)
- (3) Cleaning Patches

5) Maintenance Procedure

5-1) Cleaning

(1) Cleaning video head

First use a cleaning tape. If dirt on head is too stubborn to remove by tape, use the cleaning patch. Coat the cleaning patch with alcohol or freon to the point indicated. Touch the cleaning patch to the head tip and gently turn the head(rotating cylinder) right and left.

(Do not move the cleaning patch vertically and make sure that only the buckskin on the cleaning patch comes into contact with the head. Otherwise, the head may be damaged.)

Thoroughly dry the head. Then test tape-running. If alcohol or freon remains on the video head, the tape may be damaged when it comes into contact with the head surface.

(2) Cleaning the tape transport system and drive system, etc, by wiping with a cleaning patch wetted with alcohol or freon.

Note:

- ① It is the tape transport system which comes into contact with the running tape. The drive system consists of those parts which move the tape.
- ② Make sure that during cleaning you do not touch the tape transport system with the tip of a screw driver and no force is applied to the system that would cause deforming.

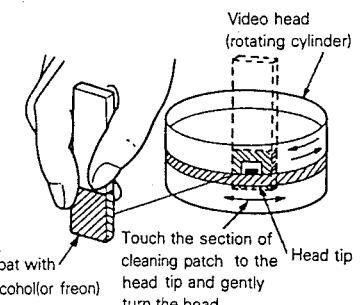


Fig. C-11-1

5-2) Greasing

(1) Greasing guidelines

Apply grease, with a cleaning patch. Do not use excess grease. It may come into contact with the tape transport of drive system. Wipe any excess and clean with cleaning patch wetted in alcohol or freon.

(2) Periodic greasing

Grease specified locations every 5,000hours.

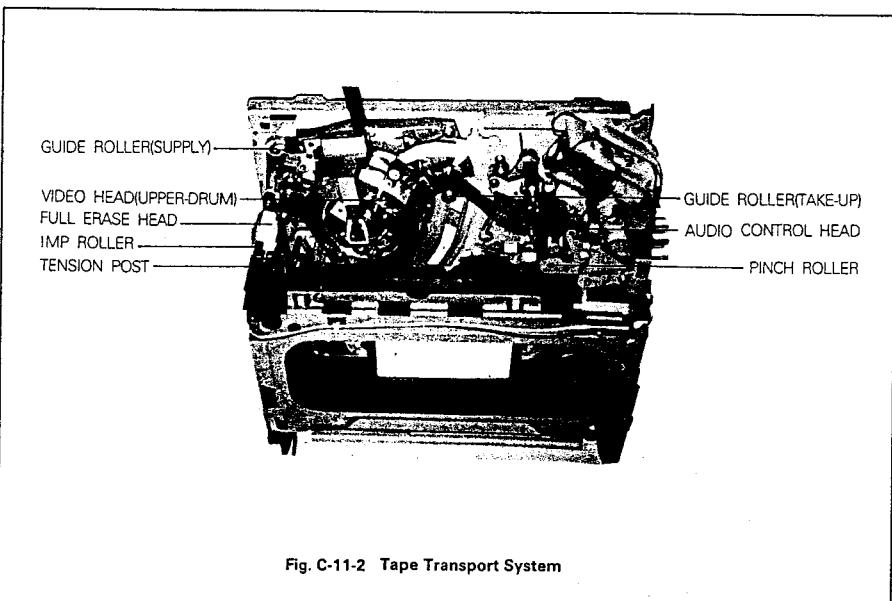


Fig. C-11-2 Tape Transport System

Phenomenon	Inspection	Replacement
Color beats	Dirt on full-erase head	①
Poor S/N no color	Dirt on video head	②
Vertical jitter	Dirt on video head Dirt in tape transport system	③
Low volume, Sound distorted	Dirt on audio/control head	④
Tape does not run. Tape is slack	Dirt on pinch roller	⑤

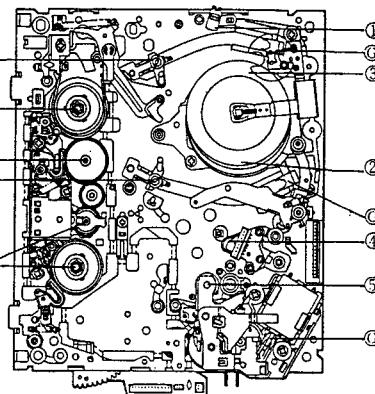


Fig. A-12 Top View of Mechanism

Phenomenon	Inspection Location	Replacement
Do not fast forward or rewind, or rotation is slow		
Tape does not run	Dirt on reel belt	⑥
Slack tape		

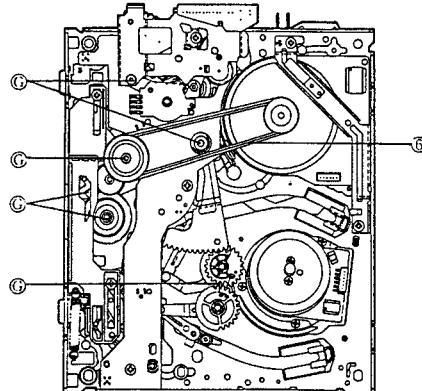


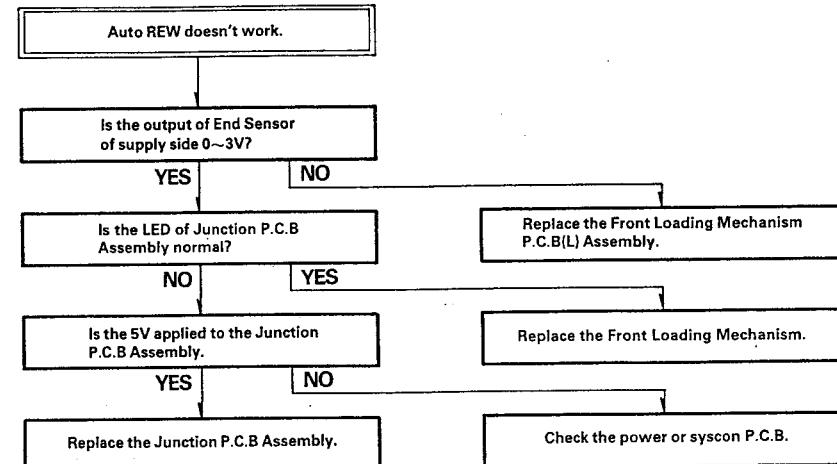
Fig. A-13 Bottom View of Mechanism

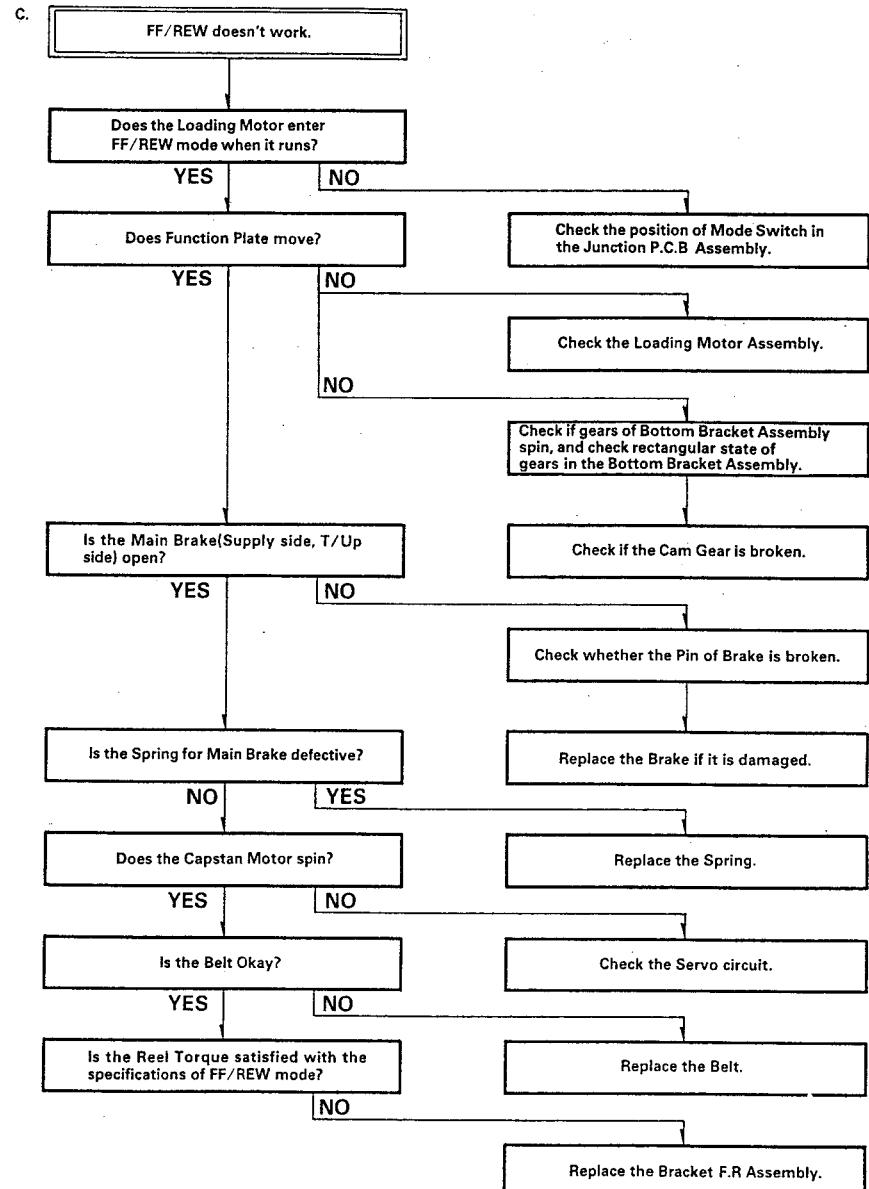
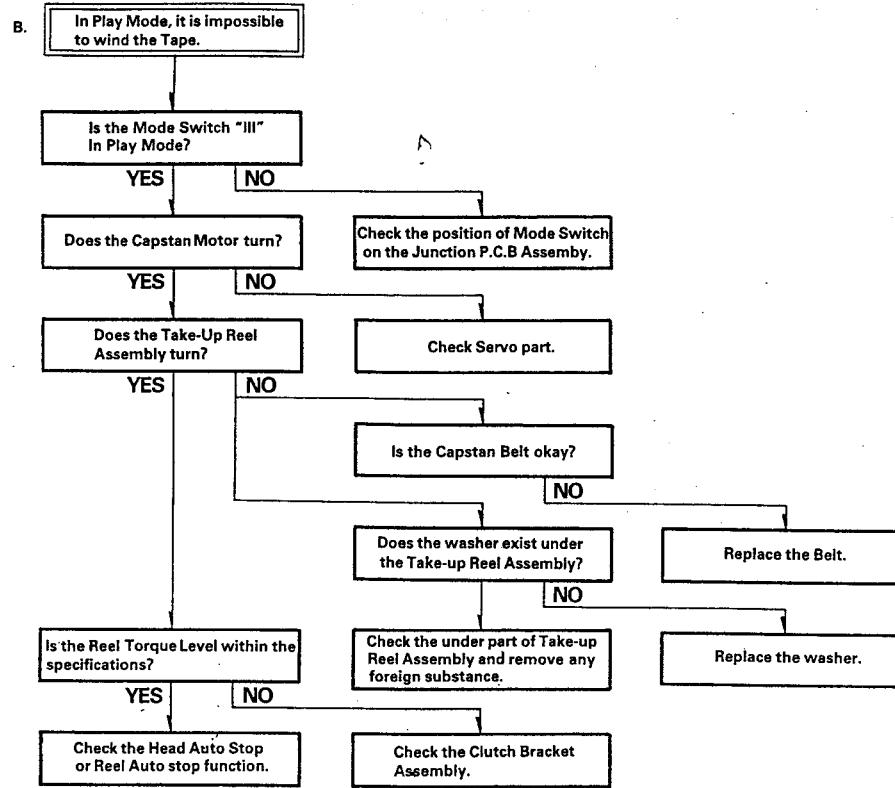
Note: If locations marked with **O** do not operate normally after cleaning, check for wear and replace. See the EXPLODED VIEWS at the end of this manual as well as the above illustrations for the sections to be lubricated and greased.

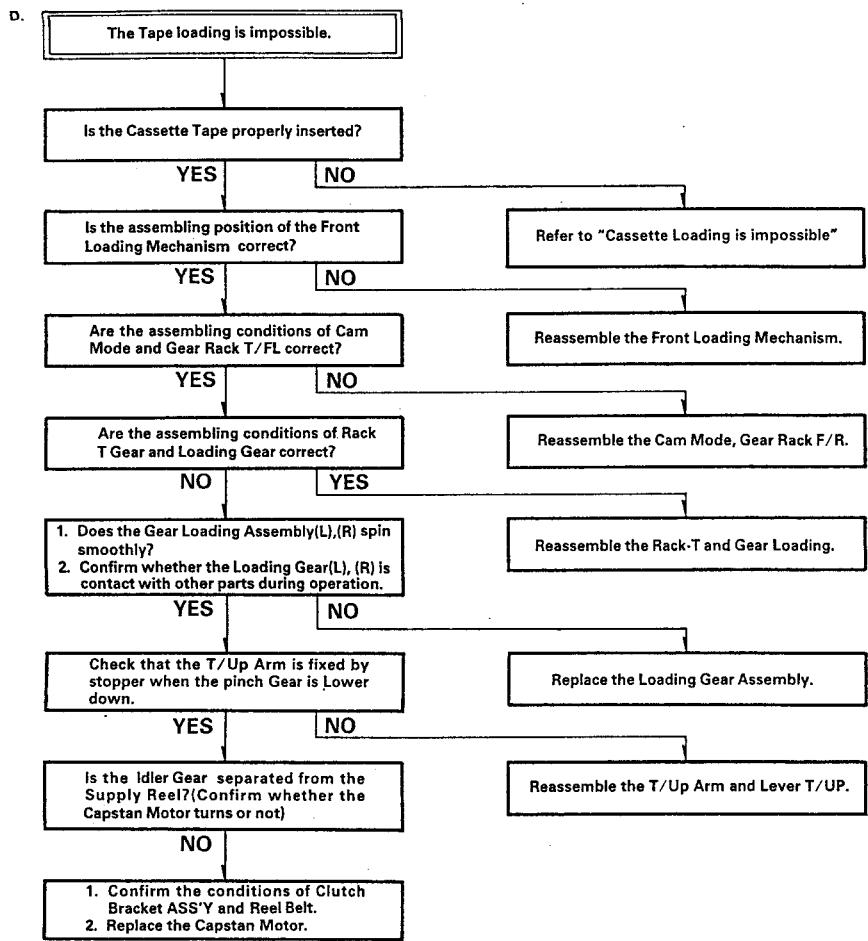
⑥:Grease

MECHANISM TROUBLESHOOTING GUIDE

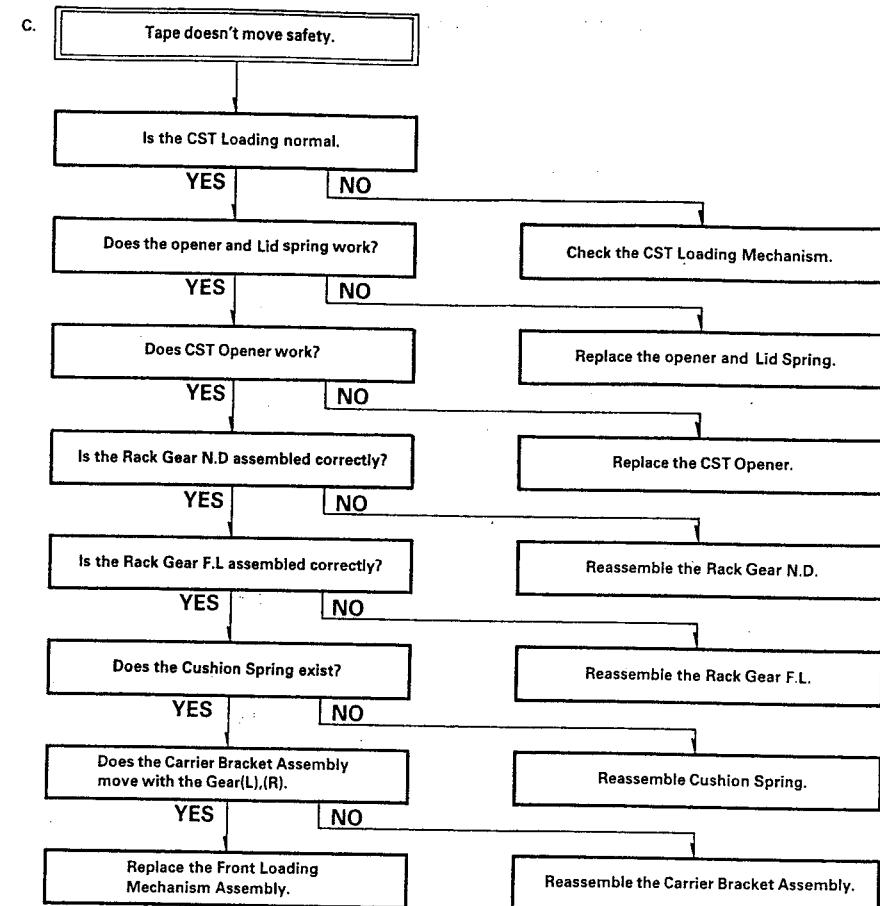
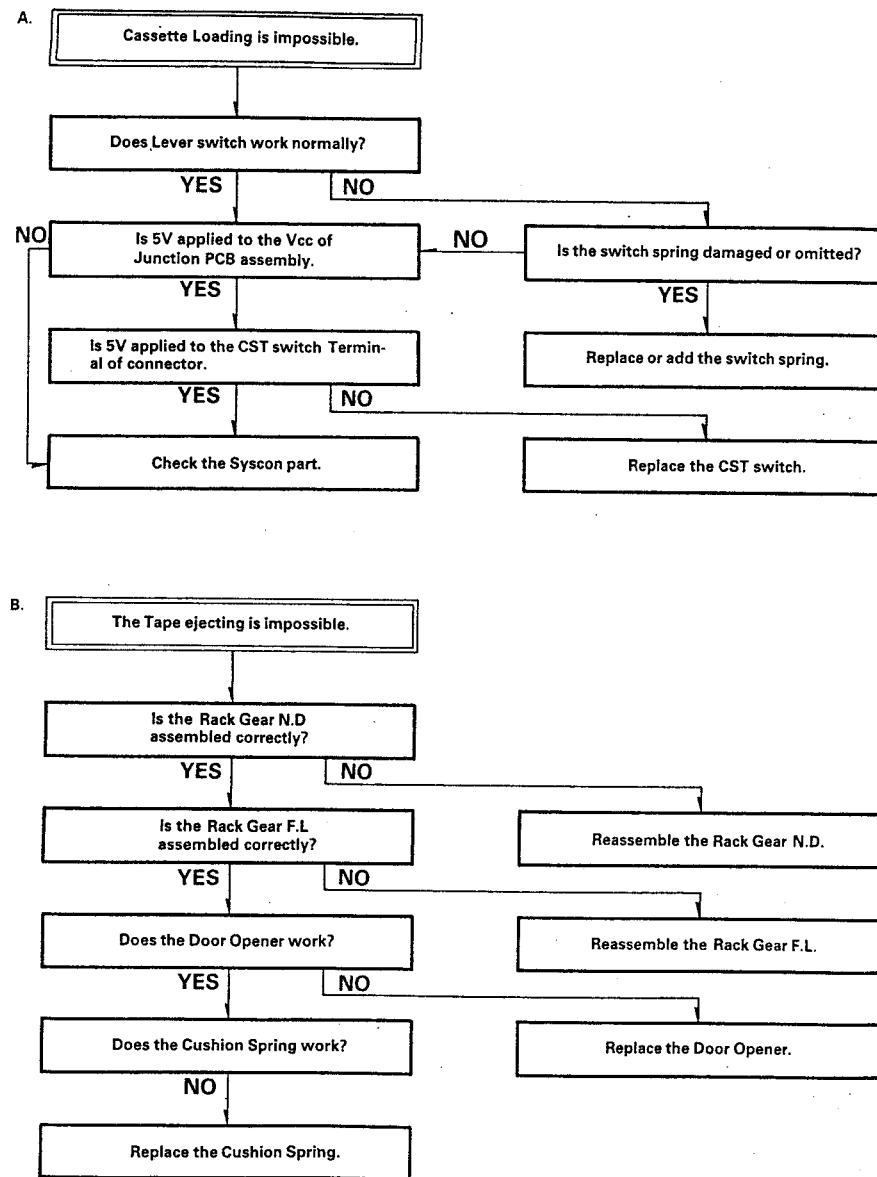
1. Deck Mechanism







2. Front Loading Mechanism



2. Front Loading Mechanism

A. Cassette Loading is impossible.

Does Lever switch work normally?

YES NO

NO Is 5V applied to the Vcc of Junction PCB assembly.

YES NO

Is 5V applied to the CST switch Terminal of connector.

YES NO

Check the Syscon part.

NO Is the switch spring damaged or omitted?

YES

Replace or add the switch spring.

Replace the CST switch.

B. The Tape ejecting is impossible.

Is the Rack Gear N.D assembled correctly?

YES NO

Is the Rack Gear F.L assembled correctly?

YES NO

Does the Door Opener work?

YES NO

Does the Cushion Spring work?

NO

Replace the Cushion Spring.

C. Tape doesn't move safely.

Is the CST Loading normal?

YES NO

Does the opener and Lid spring work?

YES NO

Check the CST Loading Mechanism.

Does CST Opener work?

YES NO

Replace the opener and Lid Spring.

Is the Rack Gear N.D assembled correctly?

YES NO

Replace the CST Opener.

Is the Rack Gear F.L assembled correctly?

YES NO

Reassemble the Rack Gear N.D.

Does the Cushion Spring exist?

YES NO

Reassemble the Rack Gear F.L.

Does the Carrier Bracket Assembly move with the Gear(L),(R).

YES NO

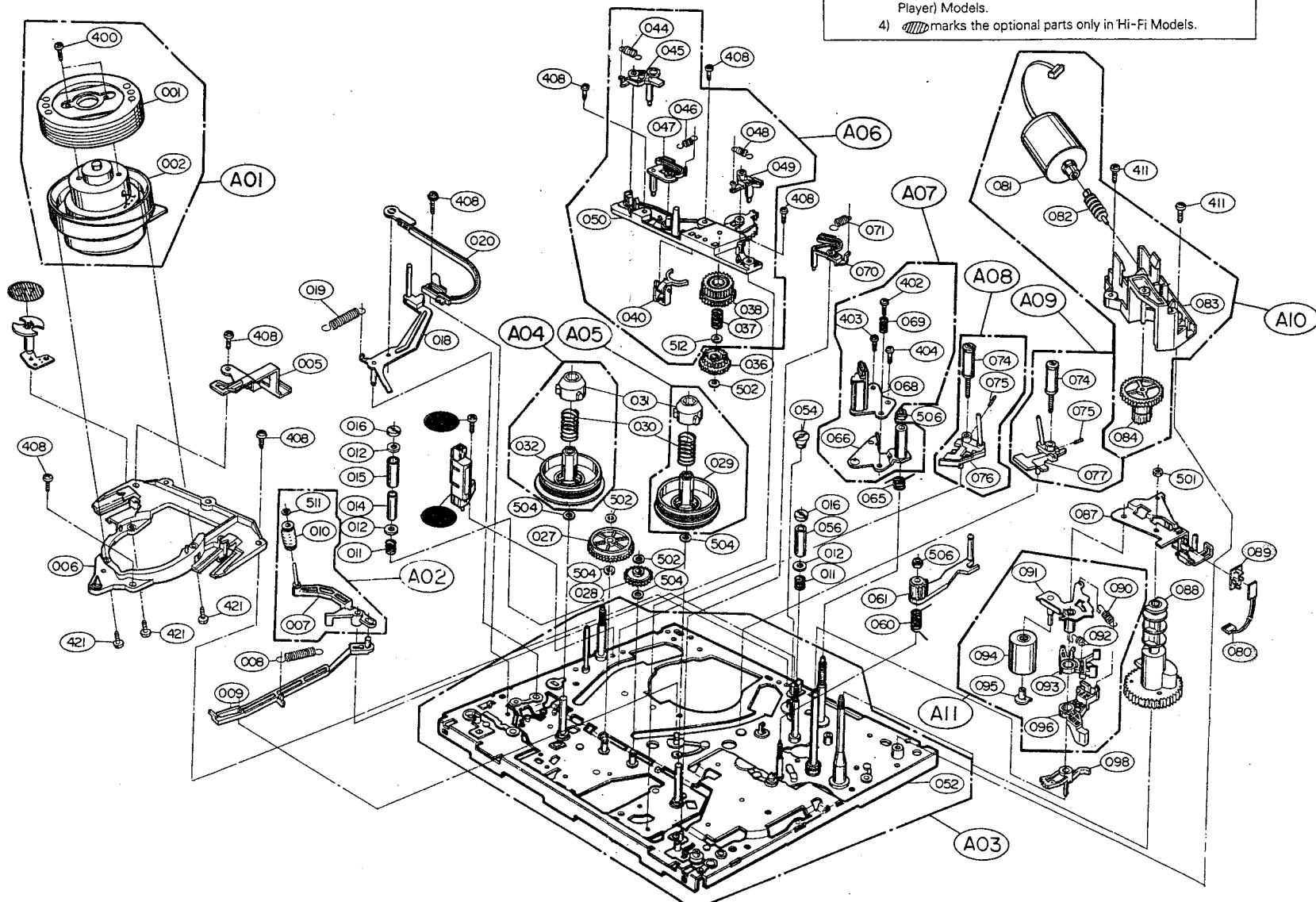
Reassemble Cushion Spring.

Replace the Front Loading Mechanism Assembly.

Reassemble the Carrier Bracket Assembly.

EXPLODED VIEW

1. Moving Mechanism Section(I)



NOTE) 1) Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.
 2) marks the optional parts only in VCR(Video Cassette Recorders) Models.
 3) marks the optional parts only in VCP(Video Cassette Player) Models.
 4) marks the optional parts only in Hi-Fi Models.

A

B

C

D

E

F

G

H

2. Moving Mechanism Section(II)

NOTE) 1) Refer to "SECTION 5 REPLACEMENT PARTS LIST"
in order to look for the part number of each part.

5

4

3

2

1

A

B

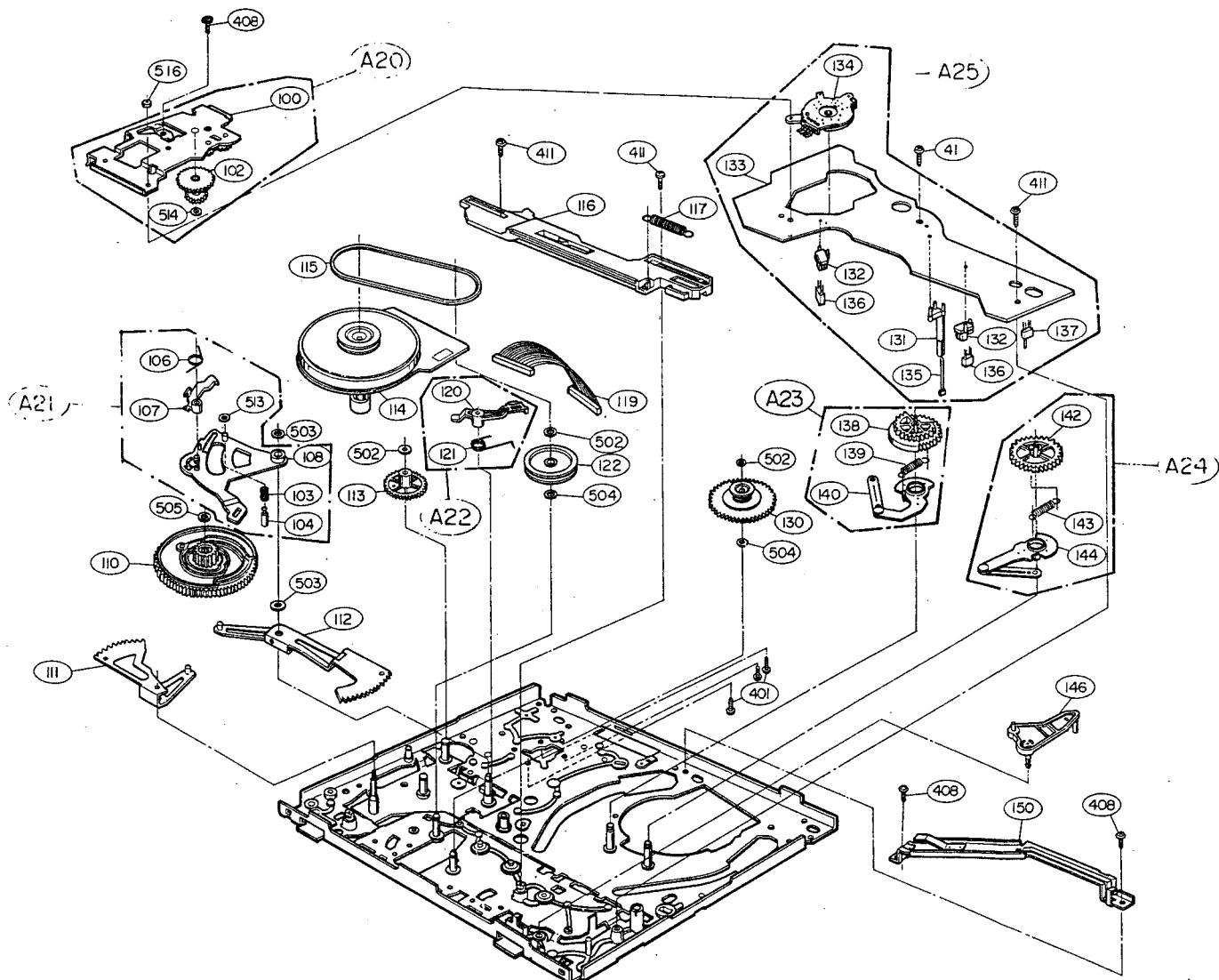
C

D

E

F

G



3. Front Loading Mechanism Section

NOTE: 1) Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.

5

4

3

2

1

A

B

C

D

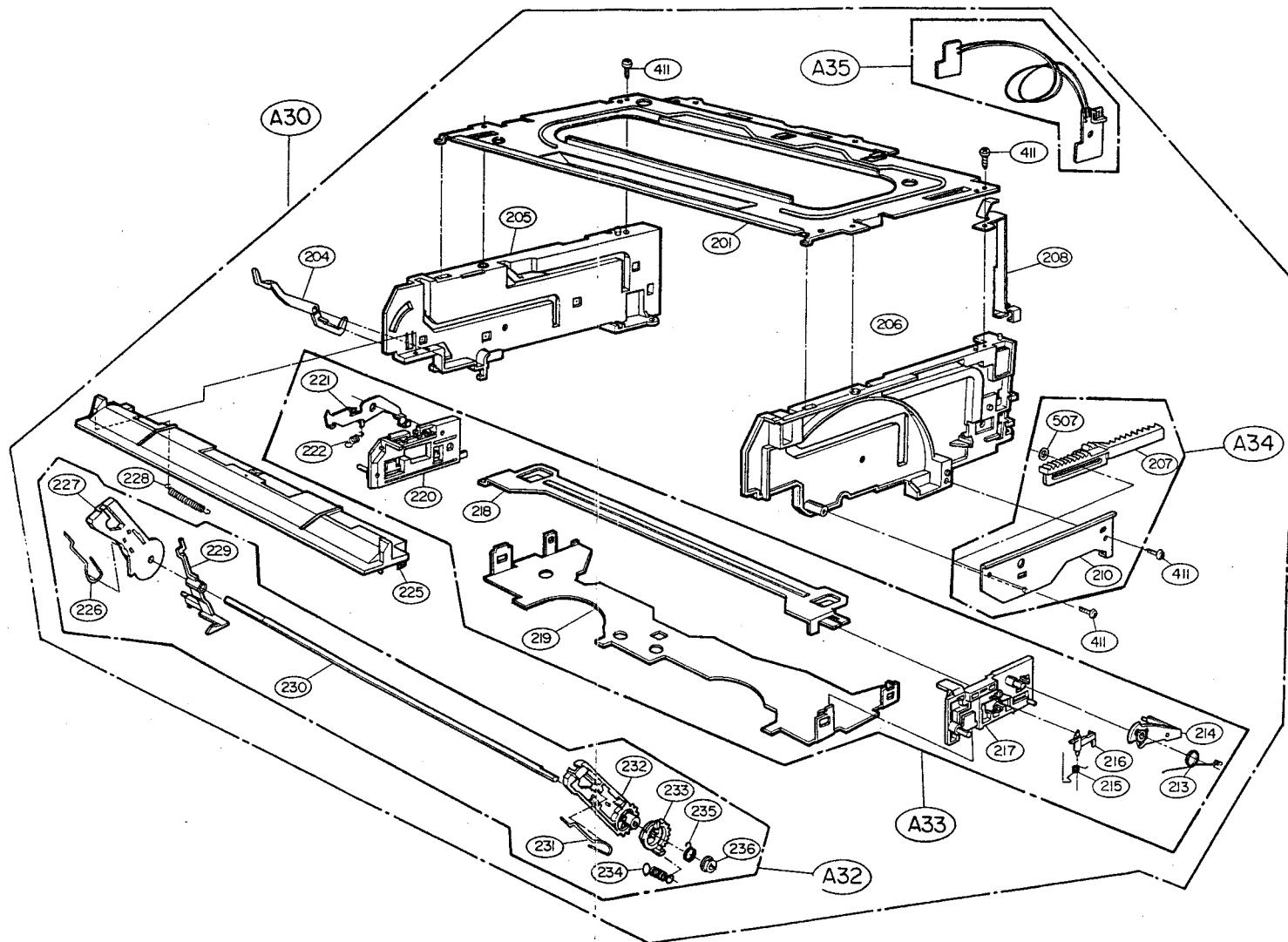
E

F

G

4-45

4-46



SECTION 5 REPLACEMENT PARTS LIST

Mechanical Section

RUN DATE : 94.06.27
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
ASSEMBLY PARTS SECTION						
OR	A00	412-126A	DECK	ASSY D-17 P (4HD VCR PAL)		
OR	A00	412C126A	DECK	ASSY D-17 S (SJ)		
OR	A00	412G126A	DECK	ASSY D-17(4HD)		
OR	A00	412H126A	DECK	ASSY D-17(4HD)		
OR	A00	412W126A	DECK	ASSY D-17 P (D/N)		
	A01	413-222D	DRUM	ASSY (D17-PAL:D4HD/S)		
OR	A01	413F222D	DRUM	ASSY GSA (D17-P4)		
	A02	386-296B	ARM	ASSY CL		
OR	A03	311-005G	CHASSIS ASSY'	D17		NSP
	A03	311-005M	CHASSIS ASSY'	D17		NSP
	A04	456-048A	REEL	ASSY SUPPLY POM 7G		
	A05	456-045A	REEL	ASSY TUP POM 7G		
	A06	321-397D	BRACKET	ASSY F/R		
	A07	225-228A	BASE	ASSY A/C		
OR	A08	225-248A	BASE	ASSY,P2		
	A08	225-248B	BASE	ASSY P2 (W-W)		
OR	A09	225-249A	BASE	ASSY,P3		
	A09	225-249B	BASE	ASSY P3 (W-W)		
	A10	414-104A	MOTOR	ASSY LOAD		
	A11	333-209E	LEVER	ASSY PINCH		
	A20	321-401A	BRACKET	ASSY BOTTOM		
	A21	333-208A	LEVER	ASSY RAT		
	A22	338-078A	BRAKE	ASSY CAP		
	A23	386-218A	ARM	ASSY LOAD(R)		
	A24	386-219A	ARM	ASSY LOAD(L)		
OR	A25	511-997D	PWB ASSY	D-17,VCR		
	A30	219-017F	HOUSING	ASSY (D17)		
	A30	219-017L	HOUSING	ASSY (D17)		
	A32	435-257B	GEAR	ASSY DRIVE (HOOK ADDED)		
	A33	321-406A	BRACKET	ASSY CARRIER		
	A34	321-441A	BRACKET	ASSY SIDE		
	A35	515-106B	PWB ASSY	SENSOR		
PARTS SECTION						
OR	001	413-165D	DRUM	ASSY UPPER(D17-PAL:D4HD/S)		
	002	413-220A	DRUM	ASSY LOWER (D17-4CH)		
	005	225-231B	BASE	ASSY D-BRUSH		
OR	006	225-220A	BASE	DRUM		NSP
	006	225-220B	BASE	DRUM (W-W)		NSP
OR	006	225-220C	BASE	DRUM (Y-H)		NSP
	007	386-297A	ARM	SUB ASSY CU		
	008	442-460B	SPRING	CU		
	009	442-459A	SPRING	CL		
	010	386-295B	ARM	CL		
	012	384-071A	GUIDE	17		
	013	523-082B	HEAD	FE,HVFHF0010AK		
OR	013	523-824A	HEAD	F.E MH-131G (D-17)		
	014	378-017A	SLEEVE	P1		

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
	OR	015	434-178A	ROLLER	P1	
		015	434-178B	ROLLER	P1	
		016	389-003B	ADJUST	P(4)	
		018	386-205A	ARM	ASSY TENSION	
		019	442-331C	SPRING	TENSION	
		020	328-052B	BAND	ASSY TENSION	
		021	334-066A	STOPPER	P1	
		027	435-243A	GEAR	IDLE A POM 3G	
		028	435-244A	GEAR	IDLE B POM 3G	
		029	456-040A	REEL	T17	
		030	442-341A	SPRING	REEL	NSP
		031	276-068A	CAP	REEL	NSP
		032	456-039A	REEL	S17	NSP
		036	435-240A	GEAR	F/R POM 3G	
		037	442-336A	SPRING	UP/D	NSP
		038	435-239A	GEAR	UP/D POM 3G	NSP
		040	333-201B	LEVER	ASSY F/R	NSP
		044	442-338B	SPRING	SSB	NSP
		045	338-081A	BRAKE	S-SOFT	NSP
		046	442-337A	SPRING	SMB	NSP
		047	338-080A	BRAKE	ASSY S-MAIN	NSP
		048	442-339D	SPRING	TSB	NSP
		049	338-083A	BRAKE	ASSY T-SOFT	NSP
		050	321-396A	BRACKET	SUB ASSY F/R	NSP
		054	389-013A	ADJUST	X-ASSY	
		056	378-018A	SLEEVE	P4	
		060	442-343A	SPRING	T/UP	
		061	386-387B	ARM	ASSY T/UP	
		065	442-332A	SPRING	A/C	
		066	225-219A	BASE	SUB ASSY A/C	NSP
		068	523-089A	HEAD	SUB ASSY A/C	
		069	442-362A	SPRING	AZIMUTH	
		070	338-085A	BRAKE	ASSY T-MAIN	
		071	442-344A	SPRING	TMB	
		074	434-173A	ROLLER	ASSY GUIDE	
		075	353-054B	SCREW	MINIATURE	
		076	225-226B	BASE	SUB ASSY SLAT(L,W-W)	
		077	225-225B	BASE	SUB ASSY SLAT(R,W-W)	
		081	414-105A	MOTOR	SUB ASSY,L	
		082	437-009A	WORM	ASSY	
		083	321-410A	BRACKET	SUB ASSY L/M	
		084	433-023A	WHEEL	WORM	
		087	321-470A	BRACKET	ASSY DEW	
		088	435-448A	GEAR	PINCH(N)	
		090	442-347A	SPRING	PINCH	NSP
		091	386-210A	ARM	ASSY PINCH	NSP
		092	442-346A	SPRING	STOPPER	NSP
		093	334-050C	STOPPER	PINCH	NSP
		094	434-181A	ROLLER	ASSY PINCH	
		094	434-181B	ROLLER	PINCH D14 X L18	
		095	276-089B	CAP	PINCH	NSP
		096	333-203A	LEVER	PINCH	NSP
		098	333-344A	LEVER	T-UP(N)	
		100	321-463A	BRACKET	SUB ASSY B	NSP
		102	435-249A	GEAR	RAT1	NSP

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		103	442-356A	SPRING	F-LEVER	NSP
		104	356-208A	PIN	F-LEVER	NSP
		106	442-345A	SPRING	RAT	NSP
		107	333-202A	LEVER	RAT	NSP
		108	333-207A	LEVER	F17	
		110	374-005A	CAM	D17 POM 10G	
		111	435-318A	GEAR	ASSY RACK F/L	
		112	435-291A	GEAR	ASSY RACK T	
		113	435-246A	GEAR	PC POM 3G	
		114	414-121B	MOTOR	CAPSTAN, GVC017S	
		115	452-047A	BELT	CENTER D71.9 X SQRT2.0	
		116	256-734A	PLATE	F17	
		117	442-342B	SPRING	FP	
		120	338-089A	Brake	SUB ASSY CAP	
		121	442-333A	SPRING	CAPSTAN	
		122	432-038A	PULLEY	GEAR POM 3G	
		130	337-005A	CLUTCH	ASSY POM 7G FELT 20X1X1T 2EA	
		131	340-001A	HOLDER	LED (Q)	
		132	324-642A	HOLDER	R/S	
		133	513-494D	PWB	JUNCTION D-17 VCR	
		134	556-133A	SWITCH	MODE	NSP
		134	556-133B	SWITCH	MODE, ALPS	
	OR	135	ODL451000AA	DIODE LED	IR SENSOR GL451(LONG) SHARP	
		135	ODL550000AB	DIODE LED	IR SENSOR EL-55L(LONG) KOC	
		136	657-102K	SENSOR	SG-105(REFL) D-16 KOC	
		137	556-131A	SWITCH	ESE-105SV1	
		138	435-234A	GEAR	LOAD(R)	
		139	442-330A	SPRING	LOADING	
		140	386-274A	ARM	SUB ASSY (R)	
		142	435-235A	GEAR	LOAD(L)	
		143	442-330B	SPRING	LOADING	
		144	386-273A	ARM	SUB ASSY (L)	
		146	333-218A	LEVER	ASSY A-TEN	
		150	321-527A	BRACKET	ASSY C-GUIDE	
		201	256-934B	PLATE	TOP	
		204	465-026A	OPENER	DOOR	
		205	321-517B	BRACKET	LEFT (D17)	
		206	321-518A	BRACKET	RIGHT (D17)	
		207	435-278A	GEAR	RACK N/D	
		208	256-910A	PLATE	GND TOP	
		210	321-440A	BRACKET	SIDE	
		213	442-351A	SPRING	OC	NSP
		214	465-028A	OPENER	CST	NSP
		215	442-357A	SPRING	RID	NSP
		216	465-027A	OPENER	RID	NSP
		217	324-647A	HOLDER	R	NSP
		218	321-407A	BRACKET	SUPPORT	NSP
		219	321-405A	BRACKET	CARRIER	NSP
		220	324-646A	HOLDER	L	NSP
		221	333-210A	LEVER	DT	NSP
		222	442-358B	SPRING	DT	NSP
		225	384-074A	GUIDE	CST	
		226	442-352A	SPRING	L	NSP
		227	435-254A	GEAR	L	NSP
		228	442-350A	SPRING	S/W	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		229	333-204A	LEVER	S/W	NSP
		230	423-368A	SHAFT	D	NSP
		231	442-353A	SPRING	R	NSP
		232	435-255A	GEAR	R	NSP
		233	435-256B	GEAR	C (HOOK ADDED)	NSP
		234	442-359C	SPRING	CUSHION (D17F/L)	NSP
		235	442-354A	SPRING	CC	NSP
		236	276-086A	CAP	DRIVE	NSP

SCREW

		400	1MDC0302418	PAN HEAD MACHINE SCREW PWASH+	D 3.0 L 8.0 MSWR3/FZY	
		401	1MPK0261418	PAN HEAD MACHINE SCREW +,-	D 2.6 L 4.0 MSWR3/FZY	
		402	353-021D	SCREW	SPECIAL	
		404	353-048C	SCREW	CONE POINT 3X10	
		408	1MBC0302418	BINDING HEAD MACHINE SCREW +	D 3.0 L 8.0 MSWR3/FZY	
		411	353-046B	SCREW	SPECIAL (3X8 FZM)	
		412	1MBC0302818	BINDING HEAD MACHINE SCREW +	D 3.0 L 12 MSWR3/FZY	
		421	1MPC0302618	PAN HEAD MACHINE SCREW +	D 3.0 L 10.0 MSWR3/FZY	
		422	1MPC0302418	PAN HEAD MACHINE SCREW +	D 3.0 L 8.0 MSWR3/FZY	
		425	1SRF0302418	BRAIZER HD TAP TITE SCREW +	D 3.0 L 8.0 MSWR3/FZY	
		426	1MPC0302018	PAN HEAD MACHINE SCREW +	D 3.0 L 6.0 MSWR3/FZY	

NUT, WASHER

		503	354-020E	WASHER	STOPPER	
		504	354-001B	WASHER	P.S D3.1XD6X0.5T	
		505	354-080E	WASHER	STOPPER	
		506	352-025A	NUT	NYLON M3	
		507	354-020J	WASHER	STOPPER(2.6X4.8X0.5)	
		508	352-033A	NUT	NUT NYLON(M3)	
		511	354-080C	WASHER	STOPPER	
		512	354-080E	WASHER	STOPPER	
		513	354-080A	WASHER	STOPPER	
		514	354-080B	WASHER	STOPPER	
		516	354-033B	WASHER	STOPPER	

Cabinet & Main Frame Section

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
ASSEMBLY PARTS SECTION						
		A43	258-677S	PANEL	ASSY FRONT	
		A44	3501R-0071A	BOARD ASSY	POWER	
		A45	3501R-0076A	BOARD ASSY	PRE-AMP(4HD)	
		A46	3501R-0070A	BOARD ASSY	MAIN	
PARTS SECTION						
		250	217-448H	CASE	TOP	
		260	315-302C	FRAME	MAIN	
OR		260	315-302D	FRAME	MAIN(PAL)	NSP
						NSP

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		265	477-034B	RUBBER	BUMPON	NSP
		267	246-032W	LABEL	MAIN	NSP
		268	255-151A	PLATE	SIDE GND(FTZ)	NSP
		269	321-532A	BRACKET	HOUSING	
		275	324-802A	HOLDER	DIGITRON	
		280	258-681H	PANEL	FRONT	NSP
		281	435-427B	GEAR	ASSY DAMPER(MILK)	
		282	221-964S	COVER	ASSY DOOR	
		283	226-077U	DOOR	CST	
		284	442-370A	SPRING	DOOR	
		287	524-007F	MAGNET	ASSY DOOR	
		300	681-051A	CORD	KKP-418J B-172 KLCE-2F PAL	
		301	321-421A	BRACKET	TR	
		303	255-150A	PLATE	HEAT SINK	
		304	221-407A	COVER	FUSE	
		320	258-693A	PANEL	ASSY DISTRIBUTOR	
		330	221-786A	COVER	BOTTOM	NSP
		331	255-152A	PLATE	DRUM SHIELD(FTZ)	NSP
		332	255-153A	PLATE	DECK GND (FTZ)	
		333	255-234A	PLATE	POWER GND	
SCREW						
		452	353-051A	SCREW	SPECIAL	
		462	353-136A	SCREW	SPECIAL(FBK) (353S353A)	
		463	1MBC0302418	BINDING HEAD MACHINE SCREW +	D 3.0 L 8.0 MSWR3/FZY	

Packing Accessory Section

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		801	480-477B	INSTRUCTION ASSY		
		802	290-023A	BOX CARTON	E.PS	
		803	283-239A	PACKING		
		804	291-002B	SHEET CUSHION	AAAM(R03) 1.5V 1PAIR(LOCAL)	
		808	534-006C	BATTERY	RF-CABLE,ASSY,PAL	
		810	861-505B	CABLE SET ASSY		NSP

Remote Control Section

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		900	597-112G	REMOTE CONTROL	R/C ASSY 94PAL	
		901	221-817A	COVER	DOOR R/C	
		902	255-344A	PLATE	TOP R/C 94PAL	
		903	217-551B	CASE	TOP R/C 94PAL W/D	
		904	556-254B	SWITCH	RUBBER A R/C 94PAL	
		905	515-702E	PWB ASSY	R/C(PAL) Q3 W/DOOR	
		906	236-452A	WINDOW	FILTER	

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		907	221-815A	COVER	BOTTOM R/C	
		908	221-816A	COVER	BATTERY	
		909	442-582B	SPRING	BATTERY 'A'	
		914	556-255A	SWITCH	RUBBER B/R/C 94PAL	
		916	1TPH0202016	PAN HEAD TAPPING SCREW +2	D20 L6.0 MSWR3(BK)	

• Fixture Section

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		FIX	960-015C	Fixture	SVC FIXTURE	
		FIX1	232-972A	BOARD ASSY	SVC FIXTURE	
		FIX2	515-973A	PWB ASSY	SVC FIXTURE-2	

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• Electrical Section

CAUTION: The * marks in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. Before replacing any of these components, read carefully the SAFETY PRECAUTIONS and SERVICING PRECAUTIONS in the manual. Do not degrade the safety of the unit through improper servicing.

Tolerance

Symbol	C	J	K	M	N	Z	P	A
%	±2	±5	±10	±20	±30	+80 -20	+100 -10	+100 -10

CC, CJ, CK: Capacitor, Ceramic
CE: Capacitor, Electrolytic
CQ: Capacitor, Polyester

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION	S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
CAPACITOR									
		C001	OCN1040K948	0.1M 50V Z F TA26		C113		624-025A	4700UF-35V(20X37)
		C002	OCN1040K948	0.1M 50V Z F TA26		C114		0CE4766F638	47M SMS 16V M FM5 TP5
		C003	OCN1040K948	0.1M 50V Z F TA26		C115		0CE4766F638	47M SMS 16V M FM5 TP5
		C004	OCN1040K948	0.1M 50V Z F TA26		C116		0CE4766F638	47M SMS 16V M FM5 TP5
		C005	OCN1030F678	0.01M 16V M Y TA26		C117		0CE4766F638	47M SMS 16V M FM5 TP5
		C006	OCN1030F678	0.01M 16V M Y TA26		C119		0CK220K945	0.022M 50V Z F TS
		C007	OCN1030F678	0.01M 16V M Y TA26		C120		0CK220K945	0.022M 50V Z F TS
		C008	OCN1030F678	0.01M 16V M Y TA26		C121		0CK220K945	0.022M 50V Z F TS
		C009	OCN1030F678	0.01M 16V M Y TA26		C122		0CK220K945	0.022M 50V Z F TS
		C010	OCN1040K948	0.1M 50V Z F TA26		C123		0CE4774D638	470M SRA 10V M FM5 TP(5)
		C011	OCN1030F678	0.01M 16V M Y TA26		C124		0CK220K945	0.022M 50V Z F TS
		C012	OCN220H948	0.022M 25V Z F TA26		C201		0CQ4734K409	0.047U 50V J POLY TE TP
		C013	0CE4764C638	47M SRA 6.3V M FM5 TP(5)		C202		0CE4766F638	47M SMS 16V M FM5 TP5
		C014	OCN1040K948	0.1M 50V Z F TA26		C203		0CE1064F638	10M SRA 16V M FM5 TP(5)
		C015	OCN1040K948	0.1M 50V Z F TA26		C204		0CE220H948	0.022M 25V Z F TA26
		C016	0CC0500K015	5P 50V C NPO TR		C205		0CE1064F638	10M SRA 16V M FM5 TP(5)
		C017	OCN1030F678	0.01M 16V M Y TA26		C206		0CE1051K638	1.0U SM 50V M FM5 BP TP(D)
		C018	OCC3300K415	33P 50V J NPO TP		C207		0CE1066K638	10M SMS 50V M FM5 TP(S)
		C019	OCN1030F678	0.01M 16V M Y TA26		C208		0CE1066K638	10M SMS 50V M FM5 TP(5)
		C021	OCN3310K518	330P 50V K B TA26		C209		0CE1051K638	1.0U SM 50V M FM5 BP TP(D)
		C022	OCN1030F678	0.01M 16V M Y TA26		C211		0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C023	OCN1030F678	0.01M 16V M Y TA26		C212		0CQ1821N409	0.0018U 100V J POLY TP
		C024	0CC8200K415	82P 50V J NPO TP		C213		0CN4720F688	4700P 16V M X TA26
		C025	OCN220H948	0.022M 25V Z F TA26		C214		0CE1064F638	10M SRA 16V M FM5 TP(5)
		C026	0CE2274C638	220M SRA 6.3V M FM5 TP(5)		C215		0CE4766F638	47M SMS 16V M FM5 TP5
		C030	OCN1030F678	0.01M 16V M Y TA26		C216		0CE2210K405	220P 50V J SL TP
		C035	0CE4764C638	47M SRA 6.3V M FM5 TP(5)		C217		0CE4700K415	47P 50V J NPO TP
		C036	OCN220H948	0.022M 25V Z F TA26		C218		0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C037	0CE4764C638	47M SRA 6.3V M FM5 TP(5)		C220		0CN4730K948	0.047M 50V Z F TA26
		C101	624-018A	LINE DE7100 FZ 472P VA1-KC		C221		0CE4746K638	0.47M SMS 50V M TP(5)
		C101	624-018D	LINE ECKDONS472ZV PAL MATSUSITA		C222		0CE4775F638	470M SR 16V M FM5 TP(5)
		C102	624-018A	LINE ECKDONS472ZV PAL MATSUSITA		C224		0CE4766F638	47M SMS 16V M FM5 TP5
		C102	624-018D	LINE ECKDONS472ZV PAL MATSUSITA		C225		0CQ4734K409	0.047U 50V J POLY TE TP
		C103	0CK220K945	0.022M 50V Z F TS		C226		0CE4756K638	4.7M SMS 50V M FM5 TP(5)
		C104	0CE4786F610	4700M SMS 16V M FL		C227		0CE4756K638	4.7M SMS 50V M FM5 TP(5)
		C105	0CE4766F638	47M SMS 16V M FM5 TP5		C241		0CN4730K948	0.047M 50V Z F TA26
		C106	0CE4766F638	47M SMS 16V M FM5 TP5		C290		0CN1030F678	0.01M 16V M Y TA26
		C107	0CK220K945	0.022M 50V Z F TS		C291		0CE4775F638	470M SR 16V M FM5 TP(5)
		C108	0CE4766F638	47M SMS 16V M FM5 TP5		C299		0CN1030F678	0.01M 16V M Y TA26
		C109	0CE1076L610	100M SMS 63V M FM5		C301		0CN220H948	0.022M 25V Z F TA26
		C110	0CE1066K638	10M SMS 50V M FM5 TP(5)		C302		0CE2274F638	220M SRA 16V M FM5 TP(5)
		C111	0CE1076L610	100M SMS 63V M FM5		C303		0CE3366F638	33M SMS 16V M FM5 TP(5)
		C112	0CK220K945	0.022M 50V Z F TS		C304		0CN8200K518	82PF 50V K B TA26

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S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
C308		0CE1076F638	100M SMS 16V M FM5 TP(5)	
C309		0CN1030F678	0.01M 16V M Y TA26	
C318		0CN1030F678	0.01M 16V M Y TA26	
C319		0CX6800K408	68P 50V J SL TA26	
C322		0CN1030F678	0.01M 16V M Y TA26	
C323		0CX2200K408	22P 50V J SL TP26	
C324		0CE2274F638	220M SRA 16V M FM5 TP(5)	
C327		0CX6800K408	68P 50V J SL TA26	
C328		0CX3300K408	33P 50V J SL TA26	
C329		0CX4700K408	47P 50V J SL TA26	
C330		0CC0600N015	6P 50V C NPO TS	
C331		0CN1030F678	0.01M 16V M Y TA26	
C332		0CE4766F638	47M SMS 16V M FM5 TP(5)	
C333		0CE2256K638	2.2M SMS 50V M FM5 TP(5)	
C334		0CN1030F678	0.01M 16V M Y TA26	
C335		0CN2200H948	0.022M 25V ZF TA26	
C337		0CN1010K518	100P 50V K B TA26	
C338		0CN1030F678	0.01M 16V M Y TA26	
C339		0CN2210K518	220P 50V K B TA26	
C342		0EG4730K948	0.047M 50V Z F TA26	
C343		0CX2200K408	22P 50V J SL TP26	
C344		0CN1030F678	0.01M 16V M Y TA26	
C346		0CCQ8221N409	0.0082U 100V J POLY TP	
C347		0CN1030F678	0.01M 16V M Y TA26	
C348		0CN2200H948	0.022M 25V ZF TA26	
C349		0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)	
C350		0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)	
C351		0CE1064F638	1.0M SRA 16V M FM5 TP(5)	
C353		0CE4775C638	470M SR 6.3V M FM5 TP(5)	
C356		0CN2200H948	0.022M 25V ZF TA26	
C357		0CE4775C638	470M SR 6.3V M FM5 TP(5)	
C358		0CE4766F638	47M SMS 16V M FM5 TP5	
C360		0CN1030F678	0.01M 16V M Y TA26	
C361		0CE4766F638	47M SMS 16V M FM5 TP5	
C363		0CX6800K408	68P 50V J SL TA26	
C364		0CC0500N015	50P 50V C NPO TR	
C365		0CE1064F638	10M SRA 16V M FM5 TP(5)	
C366		0CE1066H638	10M SMS 25V M FM5 TP	
C367		0CE3346K638	0.33M SMS 25V M FM5 TP(5)	
C368		0CN2200H948	0.022M 25V ZF TA26	
C369		0CQ2231N409	0.022U 100V J POLY TP	
C370		0CN1030F678	0.01M 16V M Y TA26	
C371		0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)	
C372		0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)	
C373		0CQ4734K409	0.047U 50V J POLY TE TP	
C374		0CC4710K405	470P 50V K SL TP	
C375		0CE1076F638	100M SMS 16V M FM5 TP(5)	
C376		0CN2200H948	0.022M 25V ZF TA26	
C377		0CC2010K405	200P 50V J SL TS	
C378		0CX1500K408	15P 50V J SL TA26	
C379		0CC4300K405	43P 50V J SL TP	
C381		0CN1810K518	180P 50V K B TA26	
C382		0CC3910K405	390P 50V J SL TP	
C383		0CN2200H948	0.022M 25V ZF TA26	
C384		0CE4775C638	470M SR 6.3V M FM5 TP(5)	
C385		0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)	
C386		0CN1030F678	0.01M 16V M Y TA26	
C387		0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)	
C388		0CN2200H948	0.022M 25V ZF TA26	
C389		0CN1040K948	0.1M 50V ZF TA26	
C390		0CE4756K638	4.7M SMS 50V M FM5 TP(5)	
C391		0CX6800K408	68P 50V J SL TA26	

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S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C392	0CN8200K518	82PF 50V K B TA26
		C393	0CN2200H948	0.022M 25V ZF TA26
		C394	0CN2230H948	0.022M 25V ZF TA26
		C395	0CQ5631N409	0.056U 100V J POLY TP
		C397	0CX3900K408	39P 50V J SL TA26
		C398	0CN1510K518	150P 50V K B TA26
		C399	0CX3300K408	33P 50V J SL TA26
		C3A1	0CN1010K518	100P 50V K B TA26
		C3A3	0CN1040K948	0.1M 50V ZF TA26
		C3B1	0CE2256K638	2.2M SMS 50V M FM5 TP(5)
		C3F1	0CX3900K408	39P 50V J SL TA26
		C401	0CN1020K518	1000P 50V K B TA26
		C402	0CE4756K638	4.7M SMS 50V M FM5 TP(5)
		C403	0CN2210K518	220P 50V K B TA26
		C404	0CE3366F638	33M SMS 16V M FM5 TP(5)
		C405	0CE2266F638	22M SMS 16V M FM5 TP5
		C406	0CQ1031N409	0.01U 100V J POLY TP
		C407	0CE4766F638	47M SMS 16V M FM5 TP5
		C408	0CQ1031N409	0.01U 100V J POLY TP
		C410	0CE4766F638	47M SMS 16V M FM5 TP5
		C411	0CQ5631N409	0.056U 100V J POLY TP
		C412	0CE2246K638	0.22M SMS 50V M FM5 TP(5)
		C413	0CN8200F668	8200P 16V M X TA26
		C414	0CE1066H638	10M SMS 25V M FM5 TP
		C415	0CQ6821N409	0.0068U 100V J POLY TP
		C416	0CE2244K638	0.22M SRA 50V M FM5 TP(5)
		C417	0CN4730K948	0.047M 50V Z F TA26
		C418	0CN4720F668	4700P 16V M X TA26
		C419	0CQ1231N409	0.012U 100V J POLY TP
		C421	0CE4756K638	4.7M SMS 50V M FM5 TP(5)
		C422	0CE1066H638	10M SMS 25V M FM5 TP
		C423	0CE4766F638	47M SMS 16V M FM5 TP5
		C424	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C4L2	0CQ2231N409	0.027U 100V J POLY TP
		C501	0CN1030F678	0.01M 16V M Y TA26
		C502	0CE1066H638	10M SMS 25V M FM5 TP(D)
		C503	0CN1030F678	0.01M 16V M Y TA26
		C504	0CN1030F678	0.01M 16V M Y TA26
		C505	0CN1030F678	0.01M 16V M Y TA26
		C506	0CN1030F678	0.01M 16V M Y TA26
		C507	0CN1030F678	0.01M 16V M Y TA26
		C508	0CN1030F678	0.01M 16V M Y TA26
		C509	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C510	0CC2200K415	22P 50V J NPO TS
		C511	0CC2400K415	24P 50V J NPO TP
		C512	0CN2230H948	0.022M 25V ZF TA26
		C513	0CN2230H948	0.022M 25V ZF TA26
		C514	0CE1076F638	100M SMS 25V M FM5 TP5
		C515	0CE1076F638	100M SMS 25V M FM5 TP5
		C516	0CN1030F678	0.01M 16V M Y TA26
		C517	0CN1030F678	0.01M 16V M Y TA26
		C518	0CE1076F638	100M SMS 25V M FM5 TP5
		C519	0CE1076F638	100M SMS 25V M FM5 TP5
		C520	62-027A	GOLD 0.047F-5.5V D13.0X8.5 NEC
		C521	0CE2274F638	220M SRA 6.3V M FM5 TP(5)
		C522	0CN1030F678	0.01M 16V M Y TA26
		C523	0CN1020K518	100P 50V K B TA28
		C524	0CN2230H948	0.022M 25V ZF TA26
		C526	0CE1066H636	10M SMS 25V M FM5 BP TP(D)
		C528	0CN2200K518	82PF 50V K B TA26
		C601	0CE4766F638	47M SMS 16V M FM5 TP5
		C602	0CE4766F638	47M SMS 16V M FM5 TP5

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S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C603	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C604	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C605	0CE4766F638	47M SMS 16V M FM5 TP5
		C606	0CE4766F638	47M SMS 16V M FM5 TP5
		C607	0CE4766F638	47M SMS 16V M FM5 TP5
		C608	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C611	0CE4775C638	470M SR 6.3V M FM5 TP(5)
		C612	0CE4766F638	47M SMS 16V M FM5 TP5
		C613	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C614	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C615	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C616	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C617	0CE4775C638	470M SR 6.3V M FM5 TP(5)
		C618	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C619	0CE4756K638	4.7M SMS 50V M FM5 TP(5)
		C620	0CE4766F638	47M SMS 16V M FM5 TP5
		C621	0CN2230H948	0.022M 25V ZF TA26
		C622	0CN2210K518	220P 50V K B TA26
		C623	0CN2210K518	220P 50V K B TA26
		C624	0CN2210K518	220P 50V K B TA26
		C625	0CN2210K518	220P 50V K B TA26
		C626	0CX3900K408	39P 50V J SL TA26
		C701	0CN2230H948	0.022M 25V ZF TA26
		C702	0CN2230H948	0.022M 25V ZF TA26
		C703	0CE4766F638	47M SMS 16V M FM5 TP5
		C704	0CN2230H948	0.022M 25V ZF TA26
		C705	0CE4775F638	470M SR 16V M FM5 TP(5)
		C706	0CE1066K638	10M SMS 50V M FM5 TP(5)
		C708	0CQ1041N409	0.1U 100V J POLY TP
		C709	0CQ1041N409	0.1U 100V J POLY TP
		C710	0CQ1041N409	0.1U 100V J POLY TP
		C711	0CE3346K638	0.33M SMS 50V M FM5 TP(5)
		C712	0CN1030F678	0.01M 16V M Y TA26
		C713	0CE4766F638	47M SMS 16V M FM5 TP5
		C714	0CN1040K948	0.1M 50V ZF TA26
		C716	0CC2210K405	220P 50V J SL TP
		C730	0CE4766F638	47M SMS 16V M FM5 TP5
		C801	0CE2274F638	220M SRA 16V M FM5 TP(5)
		C802	0CC1800K415	18P 50V J NPO TS
		C803	0CC2200K415	22P 50V J NPO TS
		C804	0CE2274F638	220M SRA 16V M FM5 TP(5)
		C805	0CN2230H948	0.022M 25V ZF TA26
		C806	0CE4766F638	47M SMS 16V M FM5 TP5
		C807	0CN2230H948	0.022M 25V ZF TA26
		C808	0CX3900K408	39P 50V J SL TA26
		C809	0CE2274F638	220M SRA 16V M FM5 TP(5)
		C810	0CC0300K015	3P 50V J NPO TS
		C811	0CC3900K415	39P 50V J NPO TP
		C812	0CN1010K518	100P 50V K B TA26
		C813	0CN1010K518	100P 50V K B TA26
		C814	0CN1010K518	100P 50V K B TA26
		C815	0CN1010K518	100P 50V K B TA26
		C816	0CN2230H948	0.022M 25V ZF TA26
		C817	0CE4766F638	47M SMS 16V M FM5 TP5
		C818	0CE4766F638	47M SMS 16V M FM5 TP5
		C821	0CN4710K518	470P 50V K B TA26
		C822	0CN1020K518	1000P 50V K B TA26
		C823	0CN2230H948	0.022M 25V ZF TA26
		C824	0CN2230H948	0.022M 25V ZF TA26
		C825	0CE4766F638	47M SMS 16V M FM5 TP5
		C826	0CE4766F638	47M SMS 16V M FM5 TP5
		C827	0CQ5621N409	0.0056U 100V J POLY TP
		C828	0CQ5621N409	0.0056U 100V J POLY TP
		C829	0CQ5621N409	0.0056U 100V J POLY TP
		C830	0CQ5621N409	0.0056U 100V J POLY TP

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
DISPLAY TUBE				
	DG901	514-032A	9BT-123GK 85X25 PAL SEJIN	
DELAY LINE				
	DL301	617-011A	MS-31PC (KSS)	
FUSE				
	F101	585-011A	T 500MA 250V S504	
	F102	585-011C	T 1.6A 250V S506	
	F103	585-011K	T2A, 250V (BESWICK)	
FILTER				
*	FL101	616-004B	LINE 801-302-FD(BUJEON)	
	FL301	616-064B	L/C LPF1.5-1BYL-0170A)S/S	
	Z301	616-323A	SFE4.25MBF (MURATA)	
IC				
OR	IC001	0ISA737400A	LA7374(PRE-AMP 4HEAD Y/C)	
OR	IC101	0IKE780060A	KIA78006P-KIA7806P(REG 6V 1A)	
OR	IC101	0IMA780060A	AN7806 5V1AREG MATSUSHITA	
OR	IC102	0IKE780060A	KIA78006P-KIA7806P(REG 6V 1A)	
OR	IC102	0IMA780060A	AN7806 5V1AREG MATSUSHITA	
IC201	0IH497560A	HD49756NT(SERVO)		
IC301	0ISA739000A	LA7390(PALY/C1CHIP)		
IC302	0IRH702500A	BA7025L PAL/MESECAM SYNC DETEC		
IC303	0IKK740300B	MSM7403RS(2H CCD) DIP-PACK		
IC401	0IRH779000A	BA7790LS(AUDIO NORMAL)		
IC501	0IMR381840X	M38184MA-134FP(SY+T)		
IC502	0IGST744500A	GL7445 (MOTOR DRIV-1CH) GSS		
IC503	0IMT523000B	PST-5230T(3.3V) LOW		
IC504	0ISM258600A	SDA2588 NVM,4K BIT		
IC601	0ISA715600A	LA7156 (CANAL S/W)		
IC701	0ISA791000A	LA7910 V BAND SELEC		
IC801	0IMI350100M	M35010-110SP(OSD)		
IC901	0ITF422100A	U4221B-A AUTO CLOCK SETTING		
ICA01	0ISM584900A	SDA5849 (VPS+PDC)		
COIL				
	ANT901	633-054A	ANTENNA COIL (DAISHIN) 77.5KHZ	
B6F1	636-010A	BEAD,BL01RN1-A62,MURATA		
B6F2	636-010A	BEAD,BL01RN1-A62,MURATA		
L001	0LR102J025	10UH 5% 4X5 TR5		
L002	0LR100K035	100M K 6X6 L5 TP		
L003	0LA1800K018	180M K 2.3X3.4 L5 TP		
L004	0LR102J025	10UH 5% 4X5 TR5		
L005	0LR0562J025	56UH 5% 4X5 TR5		
L006	0LA0332K018	33M K 2.3X3.4 L5 TP		
L045	0LA027K018	27M K 2.3X3.4 L5 TP		
L201	0LR1000J025	100UH 5% 4X5 TR5		
L202	0LR1000J025	100UH 5% 4X5 TR5		
L301	637-013B	PECK 6.80MH-J NYE		
L302	0LR1000J025	100UH 5% 4X5 TR5		
L304	0LA0152K018	15M K 2.3X3.4 L5 TP		
L305	0LA0332K018	33M K 2.3X3.4 L5 TP		
L306	0LA0332K018	33M K 2.3X3.4 L5 TP		
L307	0LA0471K018	4.7M K 2.3X3.4 L5 TP		
L308	0LR1000J025	100UH 5% 4X5 TR5		
L309	0LA0332K018	33M K 2.3X3.4 L5 TP		
LED				
	LD901	0DL112000AJ	DL-11S2RNS(SUPER,RED,03)KOC	
CIRCUIT BOARD ASSEMBLY				
	PBJ0	515-700B	JUNCTION 2 D-17S	
	PBM00	6871R-0070A	MAIN	
	PBP00	6871R-0071A	POWER	
	PBP00	6871R-0074A	PREMIERE/VPS/PDC	
	PBT00	6871R-0073A	TIMER/ACSS	
	PBY00	6871R-0075A	Y/C-SUB	
TRANSFORMER				

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
DISPLAY TUBE				
	L310	0LA0472K018	47M K 2.3X3.4 L5 TP	
	L311	0LR2700J025	270UH 5% 4X5 TR5	
	L312	0LA0822K018	82M K 2.3X3.4 L5 TP	
	L313	0LA0222K018	22M K 2.3X3.4 L5 TP	
	L314	0LA0332K018	33M K 2.3X3.4 L5 TP	
	L315	0LR1000J025	100UH 5% 4X5 TR5	
	L316	0LR1000J025	100UH 5% 4X5 TR5	
	L317	0LR1000J025	100UH 5% 4X5 TR5	
	L318	0LR1000J025	100UH 5% 4X5 TR5	
	L319	0LR18200J025	820UH 5% 4X5 TR5	
	L320	0LA0332K018	33M K 2.3X3.4 L5 TP	
	L321	0LA0472K018	47M K 2.3X3.4 L5 TP	
	L322	0LR1000J025	100UH 5% 4X5 TR5	
	L323	0LA14100A00	KTD1414 POWER (220 PACK) KEC	
	L324	0TR14100A00	KTD1414 POWER (220 PACK) KEC	
	L325	0TR23900A00	2SD2399(R) POWER ROHM	
	L326	0TR23900A00	2SD2399(R) POWER ROHM	
	L327	0TR103009AF	KRA103M-TP (KRA2203) KEC	
	L328	0TR14100A00	KTD1414 POWER (220 PACK) KEC	
	L329	0TR23900A00	2SD2399(R) POWER ROHM	
	L330	0TR103009AF	KRA103M-TP (KRA2203) KEC	
	L331	0TR127309AA	KTA1273-TP-Y (KTA66A) KEC	
	L332	0TR319809AC	KTC3198-TP-BL (KTC1815) KEC	
	L333	0TR126709AC	KTA1267-GR MINI TP KEC	
	L334	0TR319809AC	KTC198-TP-BL (KTC1815) KEC	
	L335	0TR319809AC	KTC198-TP-BL (KTC1815) KEC	
	L336	0TR103009AE	KRA103M-TP (KRA2203) KEC	
	L337	0TR103009AF	KRA103M-TP (KRA2203) KEC	
	L338	0TR103009AF	KTC198-TP-BL (KTC1815) KEC	
	L339	0TR103009AF	KTC198-TP-BL (KTC1815) KEC	
	L340	0TR103009AF	KTC198-TP-BL (KTC1815) KEC	
	L341	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L342	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L343	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC	
	L344	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC	
	L345	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L346	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L347	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L348	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L349	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L350	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L351	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L352	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L353	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L354	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L355	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L356	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L357	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L358	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L359	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L360	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L361	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L362	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L363	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L364	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L365	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L366	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L367	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L368	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L369	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L370	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L371	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L372	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L373	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L374	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L375	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L376	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L377	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L378	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L379	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L380	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L381	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L382	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L383	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L384	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L385	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L386	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L387	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L388	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L389	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L390	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L391	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L392	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L393	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L394	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L395	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L396	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L397	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L398	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L399	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L400	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L401	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L402	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L403	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L404	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L405	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L406	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L407	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L408	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L409	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L410	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L411	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L412	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L413	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L414	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L415	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L416	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L417	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L418	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L419	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L420	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L421	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L422	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L423	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L424	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L425	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L426	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L427	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L428	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L429	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L430	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L431	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L432	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L433	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L434	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L435	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L436	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L437	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L438	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L439	0TR103009AE	KRC103M-TP (KRC1203) KEC	
	L440			

RUN DATE : 94.06.27

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
R214		ORD6802F608	68K 1/6W 5 TA26	
R215		ORD5603F608	560K 1/6W 5 TA26	
R216		ORD6803F608	680K 1/6W 5 TA26	
R217		ORD2702F608	27K 1/6W 5 TA26	
R218		ORD2701F608	2.7K 1/6W 5 TA26	
R219		ORD1501F608	1.5K 1/6W 5 TA26	
R220		ORD8201F608	8.2K 1/6W 5 TA26	
R221		ORD1502F608	15K 1/6W 5 TA26	
R222		ORD8202F608	82K 1/6W 5 TA26	
R223		ORD2702F608	27K 1/6W 5 TA26	
R224		ORD4702F608	47K 1/6W 5 TA26	
R225		ORD1003F608	100K 1/6W 5 TA26	
R226		ORD1003F608	100K 1/6W 5 TA26	
R227		ORD5601F608	5.6K 1/6W 5 TA26	
R228		ORD1202F608	12K 1/6W 5 TA26	
R229		ORD3902F608	39K 1/6W 5 TA26	
R230		ORD5601F608	5.6K 1/6W 5 TA26	
R231		ORD4700F608	470 1/6W 5 TA26	
R232		ORD4700F608	470 1/6W 5 TA26	
R233		ORD4700F608	470 1/6W 5 TA26	
R234		ORD1202F608	12K 1/6W 5 TA26	
R235		ORD1004F608	1.0M 1/6W 5 TA26	
R236		ORD2203F608	220K 1/6W 5 TA26	
R237		ORD6801F608	6.8K 1/6W 5 TA26	
R238		ORD8203F608	820K 1/6W 5 TA26	
R239		ORD5601F608	5.6K 1/6W 5 TA26	
R240		ORD4701F608	4.7K 1/6W 5 TA26	
R241		ORD5602F608	56K 1/6W 5 TA26	
R242		ORD1002F608	10K 1/6W 5 TA26	
R290		ORD5301F608	3.3K 1/6W 5 TA26	
R291		ORD0101F608	1.0 1/6W 5 TA26	
R292		ORDD0101F608	1.0 1/6W 5 TA26	
R293		ORD1001F608	1.0K 1/6W 5 TA26	
R294		ORD1001F608	1.0K 1/6W 5 TA26	
R295		ORD1001F608	1.0K 1/6W 5 TA26	
R301		ORDD0222F608	22 1/6W 5 TA26	
R302		ORD2201F608	2.2K 1/6W 5 TA26	
R303		ORD1503F608	150K 1/6W 5 TA26	
R304		ORD4701F608	4.7K 1/6W 5 TA26	
R305		ORD2202F608	22K 1/6W 5 TA26	
R306		ORD1001F608	1.0K 1/6W 5 TA26	
R307		ORDD2202F608	22K 1/6W 5 TA26	
R308		ORD4700F608	470 1/6W 5 TA26	
R312		ORD1201F608	1.2K 1/6W 5 TA26	
R318		ORD1501F608	1.5K 1/6W 5 TA26	
R319		ORD1001F608	1.0K 1/6W 5 TA26	
R320		ORD4701F608	4.7K 1/6W 5 TA26	
R321		ORD1802F608	18K 1/6W 5 TA26	
R322		ORD2201F608	2.2K 1/6W 5 TA26	
R323		ORD1002F608	10K 1/6W 5 TA26	
R324		ORD1001F608	1.0K 1/6W 5 TA26	
R327		ORD2700F608	270 1/6W 5 TA26	
R328		ORD8200F608	820 1/6W 5 TA26	
R330		ORD2201F608	2.2K 1/6W 5 TA26	
R331		ORD6801F608	6.8K 1/6W 5 TA26	
R332		ORD1001F608	1.0K 1/6W 5 TA26	
R335		ORD1202F608	12K 1/6W 5 TA26	
R336		ORD3302F608	33K 1/6W 5 TA26	
R338		ORD4701F608	4.7K 1/6W 5 TA26	
R339		ORD3901F608	3.9K 1/6W 5 TA26	
R340		ORD2701F608	2.7K 1/6W 5 TA26	
R341		ORD6800F608	680 1/6W 5 TA26	

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S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
R342		ORD6800F608	680 1/6W 5 TA26	
R343		ORD1004F608	1.0M 1/6W 5 TA26	
R344		ORD8201F608	8.2K 1/6W 5 TA26	
R345		ORD1201F608	1.2K 1/6W 5 TA26	
R347		ORD1201F608	1.2K 1/6W 5 TA26	
R348		ORD4701F608	4.7K 1/6W 5 TA26	
R349		ORD1001F608	1.0K 1/6W 5 TA26	
R350		ORD3302F608	33K 1/6W 5 TA26	
R351		ORD1002F608	10K 1/6W 5 TA26	
R352		ORD4701F608	4.7K 1/6W 5 TA26	
R355		ORD1001F608	1.0K 1/6W 5 TA26	
R366		ORD1001F608	1.0K 1/6W 5 TA26	
R367		ORD3302F608	33K 1/6W 5 TA26	
R368		ORD1202F608	12K 1/6W 5 TA26	
R369		ORD1801F608	1.8K 1/6W 5 TA26	
R370		ORD6800F608	560 1/6W 5 TA26	
R371		ORD1001F608	1.0K 1/6W 5 TA26	
R372		ORD1501F608	1.5K 1/6W 5 TA26	
R373		ORD4700F608	470 1/6W 5 TA26	
R374		ORD4701F608	4.7K 1/6W 5 TA26	
R388		ORD1002F608	10K 1/6W 5 TA26	
R389		ORD1002F608	10K 1/6W 5 TA26	
R393		ORD2201F608	2.2K 1/6W 5 TA26	
R394		ORD2201F608	2.2K 1/6W 5 TA26	
R395		ORD1002F608	10K 1/6W 5 TA26	
R396		ORD2202F608	22K 1/6W 5 TA26	
R397		ORD1800F608	180 1/6W 5 TA26	
R398		ORD1002F608	10K 1/6W 5 TA26	
R399		ORD2202F608	22K 1/6W 5 TA26	
R401		ORD1002F608	10 1/6W 5 TA26	
R402		ORDD472F608	47 1/6W 5 TA26	
R403		ORD2702F608	27K 1/6W 5 TA26	
R404		ORD1500F608	150 1/6W 5 TA26	
R405		ORD2702F608	27K 1/6W 5 TA26	
R406		ORD3303F608	330K 1/6W 5 TA26	
R407		ORD1202F608	12K 1/6W 5 TA26	
R409		ORD0102F608	10 1/6W 5 TA26	
R410		ORD2701F608	2.7K 1/6W 5 TA26	
R411		ORDD0102F608	10 1/6W 5 TA26	
R412		ORD6801F608	560 1/6W 5 TA26	
R413		ORD1202F608	12K 1/6W 5 TA26	
R414		ORD1004F608	1.0M 1/6W 5 TA26	
R415		ORD4701F608	4.7K 1/6W 5 TA26	
R416		ORD2201F608	2.2K 1/6W 5 TA26	
R417		ORD6801F608	6.8K 1/6W 5 TA26	
R418		ORD3902F608	39K 1/6W 5 TA26	
R419		ORD5600F608	560 1/6W 5 TA26	
R420		ORD1201F608	1.2K 1/6W 5 TA26	
R421		ORD1502F608	15K 1/6W 5 TA26	
R422		ORD5601F608	5.6K 1/6W 5 TA26	
R423		ORD5601F608	5.6K 1/6W 5 TA26	
R424		ORD1501F608	1.5K 1/6W 5 TA26	
R425		ORD3301F608	3.3K 1/6W 5 TA26	
R426		ORD1001F608	1.0K 1/6W 5 TA26	
R427		ORD3901F608	3.9K 1/6W 5 TA26	
R428		ORD4701F608	4.7K 1/6W 5 TA26	
R4L1		ORD6801F608	6.8K 1/6W 5 TA26	

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R4L2 R4L3 R4L4 R4L5 R4L6 R4L7 R4L8 R4L9 R4L10 R4L11 R4L12 R4L13 R4L14 R4L15 R4L16 R4L17 R4L18 R4L19 R4L20 R4L21 R4L22 R4L23 R4L24 R4L25 R4L26 R4L27 R4L28 R4L29 R4L30 R4L31 R4L32 R4L33 R4L34 R4L35 R4L36 R4L37 R4L38 R4L39 R4L40 R4L41 R4L42 R4L43 R4L44 R4L45 R4L46 R4L47 R4L48 R4L49 R4L50 R4L51 R4L52 R4L53 R4L54 R4L55 R4L56 R4L57 R4L58 R4L59 R4L60 R4L61 R4L62 R4L63 R4L64 R4L65 R4L66 R4L67 R4L68 R4L69 R4L70 R4L71 R4L72 R4L73 R4L74 R4L75 R4L76 R4L77 R4L78 R4L79 R4L80 R4L81 R4L82 R4L83 R4L84 R4L85 R4L86 R4L87 R4L88 R4L89 R4L90 R4L91 R4L92 R4L93 R4L94 R4L95 R4L96 R4L97 R4L98 R4L99 R4L100 R4L101 R4L102 R4L103 R4L104 R4L105 R4L106 R4L107 R4L108 R4L109 R4L110 R4L111 R4L112 R4L113 R4L114 R4L115 R4L116 R4L117 R4L118 R4L119 R4L120 R4L121 R4L122 R4L123 R4L124 R4L125 R4L126 R4L127 R4L128 R4L129 R4L130 R4L131 R4L132 R4L133 R4L134 R4L135 R4L136 R4L137 R4L138 R4L139 R4L140 R4L141 R4L142 R4L143 R4L144 R4L145 R4L146 R4L147 R4L148 R4L149 R4L150 R4L151 R4L152 R4L153 R4L154 R4L155 R4L156 R4L157 R4L158 R4L159 R4L160 R4L161 R4L162 R4L163 R4L164 R4L165 R4L166 R4L167 R4L168 R4L169 R4L170 R4L171 R4L172 R4L173 R4L174 R4L175 R4L176 R4L177 R4L178 R4L179 R4L180 R4L181 R4L182 R4L183 R4L184 R4L185 R4L186 R4L187 R4L188 R4L189 R4L190 R4L191 R4L192 R4L193 R4L194 R4L195 R4L196 R4L197 R4L198 R4L199 R4L200 R4L201 R4L202 R4L203 R4L204 R4L205 R4L206 R4L207 R4L208 R4L209 R4L210 R4L211 R4L212 R4L213 R4L214 R4L215 R4L216 R4L217 R4L218 R4L219 R4L220 R4L221 R4L222 R4L223 R4L224 R4L225 R4L226 R4L227 R4L228 R4L229 R4L230 R4L231 R4L232 R4L233 R4L234 R4L235 R4L236 R4L237 R4L238 R4L239 R4L240 R4L241 R4L242 R4L243 R4L244 R4L245 R4L246 R4L247 R4L248 R4L249 R4L250 R4L251 R4L252 R4L253 R4L254 R4L255 R4L256 R4L257 R4L258 R4L259 R4L260 R4L261 R4L262 R4L263 R4L264 R4L265 R4L266 R4L267 R4L268 R4L269 R4L270 R4L271 R4L272 R4L273 R4L274 R4L275 R4L276 R4L277 R4L278 R4L279 R4L280 R4L281 R4L282 R4L283 R4L284 R4L285 R4L286 R4L287 R4L288 R4L289 R4L290 R4L291 R4L292 R4L293 R4L294 R4L295 R4L296 R4L297 R4L298 R4L299 R4L300 R4L301 R4L302 R4L303 R4L304 R4L305 R4L306 R4L307 R4L308 R4L309 R4L310 R4L311 R4L312 R4L313 R4L314 R4L315 R4L316 R4L317 R4L318 R4L319 R4L320 R4L321 R4L322 R4L323 R4L324 R4L325 R4L326 R4L327 R4L328 R4L329 R4L330 R4L331 R4L332 R4L333 R4L334 R4L335 R4L336 R4L337 R4L338 R4L339 R4L340 R4L341 R4L342 R4L343 R4L344 R4L345 R4L346 R4L347 R4L348 R4L349 R4L350 R4L351 R4L352 R4L353 R4L354 R4L355 R4L356 R4L357 R4L358 R4L359 R4L360 R4L361 R4L362 R4L363 R4L364 R4L365 R4L366 R4L367 R4L368 R4L369 R4L370 R4L371 R4L372 R4L373 R4L374 R4L375 R4L376 R4L377 R4L378 R4L379 R4L380 R4L381 R4L382 R4L383 R4L384 R4L385 R4L386 R4L387 R4L388 R4L389 R4L390 R4L391 R4L392 R4L393 R4L394 R4L395 R4L396 R4L397 R4L398 R4L399 R4L400 R4L401 R4L402 R4L403 R4L404 R4L405 R4L406 R4L407 R4L408 R4L409 R4L410 R4L411 R4L412 R4L413 R4L414 R4L415 R4L416 R4L417 R4L418 R4L419 R4L420 R4L421 R4L422 R4L423 R4L424 R4L425 R4L426 R4L427 R4L428 R4L429 R4L430 R4L431 R4L432 R4L433 R4L434 R4L435 R4L436 R4L437 R4L438 R4L439 R4L440 R4L441 R4L442 R4L443 R4L444 R4L445 R4L446 R4L447 R4L448 R4L449 R4L450 R4L451 R4L452 R4L453 R4L454 R4L455 R4L456 R4L457 R4L458 R4L459 R4L460 R4L461 R4L462 R4L463 R4L464 R4L465 R4L466 R4L467 R4L468 R4L469 R4L470 R4L471 R4L472 R4L473 R4L474 R4L475 R4L476 R4L477 R4L478 R4L479 R4L480 R4L481 R4L482 R4L483 R4L484 R4L485 R4L486 R4L487 R4L488 R4L489 R4L490 R4L491 R4L492 R4L493 R4L494 R4L495 R4L496 R4L497 R4L498 R4L499 R4L500 R4L501 R4L502 R4L503 R4L504 R4L505 R4L506 R4L507 R4L508 R4L509 R4L510 R4L511 R4L512 R4L513 R4L514 R4L515 R4L516 R4L517 R4L518 R4L519 R4L520 R4L521 R4L522 R4L523 R4L524 R4L525 R4L526 R4L527 R4L528 R4L529 R4L530 R4L531 R4L532 R4L533 R4L534 R4L535 R4L536 R4L537 R4L538 R4L539 R4L540 R4L541 R4L542 R4L543 R4L544 R4L545 R4L546 R4L547 R4L548 R4L549 R4L550 R4L551 R4L552 R4L553 R4L554 R4L555 R4L556 R4L557 R4L558 R4L559 R4L560 R4L561 R4L562 R4L563 R4L564 R4L565 R4L566 R4L567 R4L568 R4L569 R4L570 R4L571 R4L572 R4L573 R4L574 R4L575 R4L576 R4L577 R4L578 R4L579 R4L580 R4L581 R4L582 R4L583 R4L584 R4L585 R4L586 R4L587 R4L588 R4L589 R4L590 R4L591 R4L592 R4L593 R4L594 R4L595 R4L596 R4L597 R4L598 R4L599 R4L600 R4L601 R4L602 R4L603 R4L604 R4L605 R4L606 R4L607 R4L608 R4L609 R4L610 R4L611 R4L612 R4L613 R4L614 R4L615 R4L616 R4L617 R4L618 R4L619 R4L620 R4L621 R4L622 R4L623 R4L624 R4L625 R4L626 R4L627 R4L628 R4L629 R4L630 R4L631 R4L632 R4L633 R4L634 R4L635 R4L636 R4L637 R4L638 R4L639 R4L640 R4L641 R4L642 R4L643 R4L644 R4L645 R4L646 R4L647 R4L648 R4L649 R4L650 R4L651 R4L652 R4L653 R4L654 R4L655 R4L656 R4L657 R4L658 R4L659 R4L660 R4L661 R4L662 R4L663 R4L664 R4L665 R4L666 R4L667 R4L668 R4L669 R4L670 R4L671 R4L672 R4L673 R4L674 R4L675 R4L676 R4L677 R4L678 R4L679 R4L680 R4L681 R4L682 R4L683 R4L684 R4L685 R4L686 R4L687 R4L688 R4L689 R4L690 R4L691 R4L692 R4L693 R4L694 R4L695 R4L696 R4L697 R4L698 R4L699 R4L700 R4L701 R4L702 R4L703 R4L704 R4L705 R4L706 R4L707 R4L708 R4L709 R4L710 R4L711 R4L712 R4L713 R4L714 R4L715 R4L716 R4L717 R4L718 R4L719 R4L720 R4L721 R4L722 R4L72

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION	S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
RESONATOR									
X502 618-017A FCR6.0MCT2 TDK-J(TAPING)									
ZENER DIODE									
		ZD101	0DZ820009AA	MTZ8.2B TP ROHM-K			ZD103	0DZ330009AF	MTZ33B TP ROHM-K
		ZD104	0DZ130009AC	MTZ13B TP ROHM-K			ZD105	0DZ150009BA	MTZ15A TP ROHM-K
		ZD401	0DZ100009AA	MTZ10B MINI TP ROHM-K			ZD501	0DZ2820009BB	UZ8.2BS 5MM TP UNIZON
		ZD502	0DZ100009AA	MTZ10B MINI TP ROHM-K			ZD601	0DZ150009BC	MTZ15B ROHM-K
		ZD602	0DZ150009BC	MTZ15B ROHM-K			ZD603	0DZ150009BC	MTZ15B ROHM-K
		ZD604	0DZ150009BC	MTZ15B ROHM-K			ZD605	0DZ100009AA	MTZ10B MINI TP ROHM-K
		ZD701	0INE574000A	UPC574J 30V ZENER					
REMOCON RECEIVER									
		R/C901	668-226S	R/C REC(GL3276)H+25MM MESH KTC					
SCART									
		JK601	573-006C	RGB SOKET SR-21S3 21PIN (BK)			JK602	573-006D	RGB (BLUE)
SWITCH									
		SW901	556-032S	KPT-1105A			SW902	556-032S	KPT-1105A
		SW903	556-032S	KPT-1105A			SW904	556-032S	KPT-1105A
		SW905	556-032S	KPT-1105A			SW906	556-032S	KPT-1105A
	OR	SW907	556-032A	SKHH 10902A			SW907	556-032S	KPT-1105A
	OR	SW908	556-032A	SKHH 10902A			SW908	556-032S	KPT-1105A
	OR	SW909	556-032A	SKHH 10902A			SW909	556-032S	KPT-1105A
		SW909	556-032S	KPT-1105A					
TUNER									
*		TU701	521-406A	B/G 31N1 ENG-57504N MATHUSHITA					
VARIABLE RESISTOR									
		VR201	613-032U	RH0638C15R0WA (100k)			VR301	613-032N	RH0638C14R14A (10k)
		VR302	613-032Q	RH0638C14R0WA (22k)			VR303	613-032N	RH0638C14R14A (10k)
		VR304	613-032G	RH0638C13R0VA (1k)			VR305	613-032Q	RH0638CJ4R0WA (22k)
		VR401	613-032U	RH0638C15R0WA (100k)					
CRYSTAL									
		X302	529-020P	4.433619MHZ 15PPM GRAY L=4.0			X501	529-001B	32.768KHZ NDK
	OR	X501	529-001D	32.768KHZ(2X6) SEIKO			X801	529-022H	17.734476MHZ CL=16P 20PPM 4.0
		X901	529-001F	77.503KHZ 2 ¹⁶ CITIZEN					